ESTABLISHMENT OF DIGITAL DATABASE FOR KOREAN CLASSICS

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ABSTRACT

Pre-modern Korea, standing on the basis of Confucianism, considered reading and writing as the most essential parts of scholarly activities. Accordingly, the elite as well as the crown bequeathed great volumes of literary works which are considered as priceless legacy, including 'The Annals of the Joseon Dynasty' and collections of writings by highly respected scholars. Back in the 1980s, researchers themselves had to read the collections all, in order to find information needed for their research. Since the 1990s in which databases of Korean classical books and materials started to be established, the research environment for Korean studies has been significantly improved. Now, the necessary information can be brought by only simple searching actions on the web. For example, looking for the records of Du Fu in 'The Annals of the Joseon Dynasty' researchers necessarily used to look through all the 1,893 volumes in the past. Now they simply visit the website (http://sillok.history.go.kr/) and enter the term 'Du Fu' in the search bar. Then, all the information which is around 32 records about Du Fu will be revealed instantly.
The paper will explore and discuss the current state of the digital resources for the study of Korean classics and their use by the researchers. It will also discuss its problems and suggest some plans for the solution.

Keywords: Database, Korean classics, website, writings

1. Writings about Korean traditional houses

In Korea, many traditional houses built from 15th century to mid-20th century are relatively well preserved. Especially, a tile-roofed house shown in the below figure is a typical one where an elite class of the past lived.

Figure 1 traditional houses

These elites had taken intensive literary training from a childhood and as a result, are well equipped with liberal arts knowledge. At the time when passing national examination and being selected as a public official are regarded as a road to success, a deep understanding of literary ability is a key in success of the national examination.

They were so called Renaissance man because they were knowledgeable in a variety of subjects such as literature, philosophy, art, music, architecture, etc. In many cases, they tried to design their own houses for themselves to reflect their own value and philosophy via their house. Therefore, elites made a full use of their liberal arts knowledge to name their house and to write records related to the house**.** Such records were usually written by house owner's friends or public figure, and some owners wrote it for themselves. Even when friends or public figures wrote it, they intended to reflect house owner's thoughts. (In the next page, the left picture shows the name of a house while the right picture shows records related to the house. As you can see in the picture, hanging a record under the eaves was general, it was also written in a paper form.)

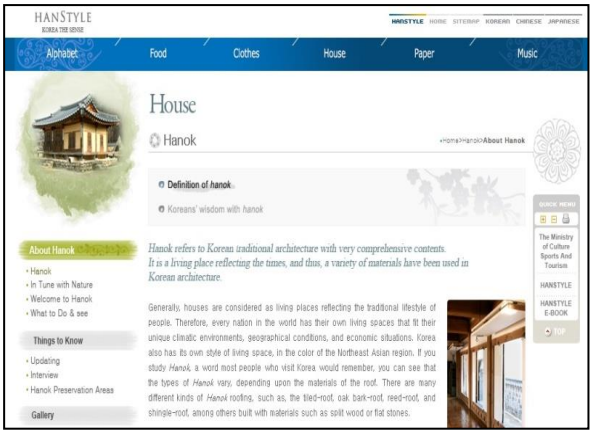
Figure 2 Knowledge architecture

A quite few of these records are well maintained and turn out to become precious classics of Korea. (The classical Chinese scripts are generally used among Korean elite class until the 20th century. As Latin language was used as a public character in the middle ages Europe, classical Chinese had been regarded as public language in China, Korea, Japan, and Vietnam. However, translation to modern Korean language by experts is necessary nowadays because most young generations in Korean do not know how to read classical Chinese.) Therefore, these heritages should be available to the public and the researchers. The best way to achieve this idea is to construct database via an internet network.

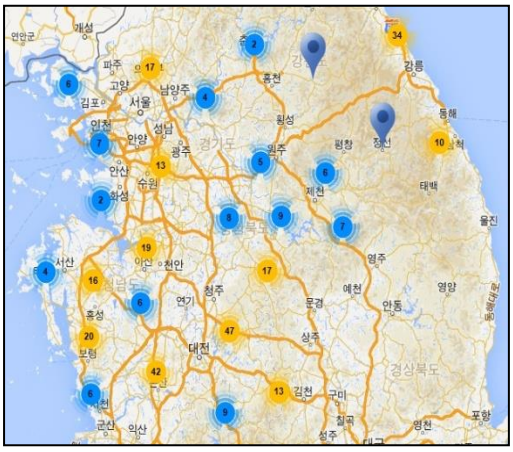
2. Digital Database of the classics

The institute of Far Eastern Studies in Yonsei University has been working on the project that shoots written heritages of the traditional houses in the entire South Korea and translates them to modern Korean language. Then the whole database is publishing at the internet homepage[1]. (front page of the homepage is shown below / Left: Korean version. Right: English version).

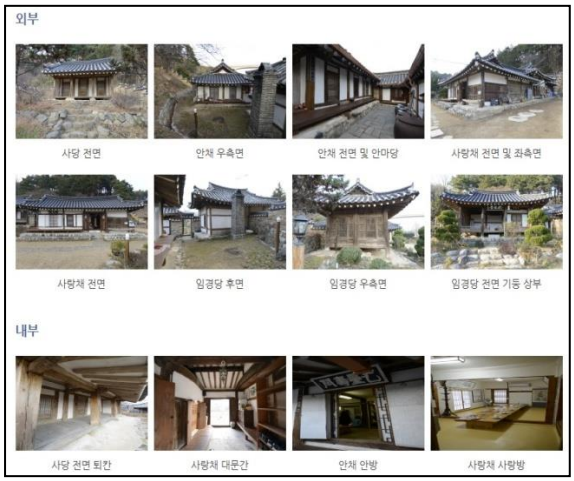
[1] http://www.kculture.or.kr/korean/oldhome/ohmain.jsp



Although the basic information in English, Chinese, and Japanese is available in this website, more in-depth information is only available in Korean.



As the left figure shown, the locations of all the traditional houses in Korea are displayed on the map. When users click the point they want, they can gather data such as a historical background of home owner, pictures of those houses(see below left), pictures of the written heritage(see below right), and the original texts and translation in modern Korean language.



Through this database, one can easily obtain the information of the current status of traditional houses and the original contents of written heritage in the house. Many experts in Korean classical literature and architecture have made endless efforts to establish this useful information database.

3. Improvement Proposal of the Database

As we mentioned above, a useful database from the project has been successfully made. However, there is more space for further improvement. We want to list the followings:

First, it is very urgent to provide English service for the website. To draw more attention and utilization from international societies, it is the first step to make English service accessible.

Second, an anecdote or oral fork tale of individual house will help written heritage to easily get recognized by public. Korean traditional houses can be a source of plots for movies, drama, and novels. However, written heritage is currently introduced and described in a very dry and formal way. Written heritage can be frequently used in cultural contents if interesting stories are attached to them.

Third, currently all information services are self-contained within the homepage and no external links exist. Hyperlinks between the homepage and other knowledge information on World Wide Web should be intelligently utilized to explore knowledge interactions. For example, we can explore and compare Korean traditional houses to other traditional houses in Europe. In addition, interdisciplinary research with philosophy, history, art, calligraphy, etc. can be conducted more efficiently if hyperlinks are provided.

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ENGLISH LANGUAGE TEACHERS' VIEWS ON THE NEW NATIONAL CURRICULUM FOR 2nd GRADERS

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ABSTRACT

Prior to the 2014-2015 school year, English language courses started at the fourth grade in Turkish primary schools. Starting in the 2014-2015 school year, second graders (6 to 7 year-old learners) in Turkish primary schools started to take English language courses with the implementation of the new national curriculum for primary schools grades 2 to 8. What made this curriculum different from previous ones was its insistence on curricular gains that were designed in consideration of communicative language teaching and the Common European Framework of Reference for Languages: Learning, teaching, assessment (CEFR). So far, little research has been produced collecting teachers' views on this new curriculum in practice. Hence, in this study, the views of 4 primary school English language teachers currently teaching second graders were collected and analyzed to understand the perceived strengths and weaknesses of the new curriculum and the educational appropriateness of the curricular gains set for that specific level (2nd grades). Secondly, theoretical concerns and practical challenges associated with the implementation of the new curriculum are studied. Results showed that majority of these teachers had positive views on the new curriculum with its curricular gains although classroom materials and teaching hours remain problematic for them.

Keywords- Curriculum, English, national, young learners.

INTRODUCTION

Educational realities in which we live and work in the 21st century have resulted in a widespread demand for curricular reform in all areas of education (Voogt & Roblin, 2012). English was introduced as a compulsory subject for young learners at the elementary level (grades four through eight) in Turkey in 1997 and another curricular change occurred in 2005 in order to improve the English language teaching program prescribed by the 1997 curriculum (Çelik, Kirkgöz & Arikan, 2015). However, a new curriculum is accepted by the Ministry of National Education (MNE, 2013) for 2nd through 8th graders the result of which is introducing English to young learners studying at the second grade. In this latest curriculum, the principles of the *CEFR* were put into practice in a way to emphasize the development of communicative competence, intercultural awareness, and self-assessment.

While these administrative curricular changes show the importance given to English language education in Turkey, it equally brings challenges to various aspects of foreign language education in Turkey (Akçay, Bütüner & Arikan, 2015: p. 57). Curricular changes in Turkey are the decisions of a centralized educational system which affect all aspects of schooling from coursebooks and instructional methods to in-class as well as national examinations.

These changes, no matter how applicable they seem, do not bring educational success that may satisfy the expectations of teachers as well as administrators which can be explained by Cakir (2010) as follows:

Second graders are especially important for curriculum makers as well as classroom teachers simply because young learners are first exposed to English in their formal education at this grade. As Yule (2006) states, learners who have increased motivation are more likely to attain more successful results in their language learning. Hence, owing to the recognition that young learners' motivation and positive learning experiences are of paramount significance in their present and future learning, it must be accepted that the curriculum for and instruction at this specific elementary-level grade is significantly important.

"Coursebooks still continue to be the single most important resource in the language classroom throughout the world" (Arikan, 2008: p. 71) while they are especially important for Turks because every curricular change is first reflected in the coursebooks used through changing or reprinting them). Research studies on young learners' English language classrooms have been flourishing in Turkey for the last decade although "very few of them are empirical studies," but the bulk of which require "further changes in policies and curricula" (Arikan, 2015: p. 77). Hence, the aim of this present study is to understand teachers' opinions on the new curriculum with a focus on the curriculum for the 2nd graders. Specifically, this study tried to find answers to the following questions:

1. What are the perceived strengths and weaknesses of the new curriculum?

2. What is the educational appropriateness of the curricular gains set for that specific level (2nd grades)?

3. What are teachers' theoretical concerns and practical challenges associated with the implementation of the new curriculum?

METHODOLOGY

This study followed a qualitative research design which collected data (opinions of the participants) through interviews. Data collection process took approximately two weeks. All interviews were carried out on the phone and during the interviews teachers' opinions were written down by the researcher in forms of notes which served as the raw data. Content analysis was used to analyze the data through multiple reading of the data. Emerging themes were categorized and coded and a colleague compared the notes to the findings reached by the researcher.

RESULTS

Results of this study are given below under specific research questions.

1. What are the perceived strengths and weaknesses of the new curriculum?

All participants shared positive views on the new curriculum. Participant 1 stated that "This curriculum is applicable as a system, as a whole, on condition that students complete it from the very beginning to the end, that is, from the 2nd to the 8th grade." Participant 1 says:

> Our children acquire the things we teach easily and in an excellent manner. In that sense, our curriculum is appropriate. Of course, the results will appear in time as we put the curriculum into practice.

The major strength of the curriculum for 2nd graders rests in its insistence on learning with visuals. All participants stated that 2nd graders enjoyed learning with colorful visuals which was advocated by the new curriculum. Participant 2 stated that "The visuals given in coursebooks are appropriate for learners' age and the new curriculum makes teachers make use of videos and TPR activities more than anything else. These are all appropriate for 2nd graders' interest in topics."

As for the weaknesses of the new curriculum as a document, all participants agree that the major weakness of the curriculum rests in how it is realized, that is, through the coursebooks published in accordance with the curriculum. Participant 1 points at the fact that "all curricula depend on coursebooks in Turkey." However, in her opinion, coursebooks sent to them for instruction "are still following the footprints of traditional instruction as you can see when you closely compare the gains specified in the curriculum and the activities printed in the coursebooks." Furthermore, she complains about the materials and realia she should use in her classrooms because "materials and realia are lacking in the curriculum. In my opinion, there must be tons of materials prepared and shared with the teachers in order to put the curriculum into practice, but we don't have anything that comes with the curriculum."

Another weakness mentioned by some of the participants

2. What is the educational appropriateness of the curricular gains set for that specific level (2nd grades)?

Three participants agreed that the gains specified in the curriculum were appropriate. However, Participant 3 stated that "Only 80% of the gains are appropriate":

If you look at each gain, they are okay. But in practice, the coursebook activities are not appropriate when the gains are compared to those activities through which those gains will be realized. For example, throughout one unit, we sang and danced, played vocabulary games and completed puzzles after which a structure-based activity appeared that made my students feel lost. When I looked at the curriculum, I noticed that there actually was a gain that needed the knowledge of the structure, but still this could be delivered without such a game.

Participant 4 mentions the problem of lacking dialogues in the coursebooks as an important problem which makes the curriculum game-based rather than communication-based. For him, "The words to be taught are nice and appropriate and the visuals corresponding to them are meaningful, but there are almost no real-life dialogues. Even children at that age should be taught a foreign language for communication." Despite this negative comment which is understandable and acceptable, these results suggest that the gains specified in the curriculum are found to be appropriate for the level of the 2nd graders.

3. What are teachers' theoretical concerns and practical challenges associated with the implementation of the new curriculum?

For Participant 1, as she repeatedly claims, "continuity is key." Therefore, although she thinks that this curriculum is "appropriate" for her 2nd graders, "breaking away from the curriculum in the future years of education will definitely spoil everything." Participant 3 gives an example to this break away by mentioning the 5th grade curriculum which contains "tenses" within its content. For him, "students do not understand the concept of the Simple Present Tense although the coursebook has activities that require knowledge of the tenses. This theme pointed at the importance of studying the curriculum from a wholistic perspective.

Speaking of putting the curriculum into practice, Participant 1 starts talking about her experiences related with the curriculum in practice. She argues that "it is not what is actually written on paper, but what matters is how it is applied:

> In the curriculum for 2nd graders, reading and writing skills are delayed because the main skills to develop are listening and speaking. It is good, but parents are complaining by saying "How can they learn without reading and writing?" or "A class without a notebook? Where do they write what they learn?"

Infrastructure is the major concern of all participants. Participant 1 summarizes her overall experiences related with what surrounds the curriculum at school as follows: "What matters is the infrastructure and we definitely lack that." Similarly, Participant 2 argues that she is teaching at a village school in which "OHPs and adequate loud-speakers are non-existent." Participant 4 also states that administrators make the realization of the curriculum very difficult. His narrative of an event shows the difficulty he faced as follows:

> Our loud-speakers are very old and useless. You feel as though a motor car is driving in the classroom when you listen to a text. One day, I was trying to do a singing and acting activity as suggested by the curriculum and all of a sudden, our school's principal opens up the door in the middle of the activity and yells out 'There are other classes at work, please be quiet.' Students sat down right away, all my energy drained and I didn't want to continue teaching at all."

CONCLUSION AND FUTURE WORK

According to Wood and Attfield (2005, p. 138), the most important aspect of curricula prepared for young learners is to understand the beliefs surrounding "what is considered to be educationally and developmentally worthwhile in terms of children's immediate needs, their future needs and the wider society." However, when the fact that written curricula are put into practice by teachers who work as curriculum realizers, the importance of their opinions and the nature of their classroom experiences becomes obvious. Hence, in this particular study, English language teachers' opinions on the English language curriculum for 2nd grades were collected and analyzed so as to give feedback to Turkey's national curriculum for young learners. Results showed that all participants shared positive views on the new curriculum although they raised their concerns about the coursebooks which, in their opinions, are curricula in action. The fact that coursebooks are curricula in action is also supported by previous research within the context of this present study (Arikan, 2008) since "coursebooks present a smooth running curricular program for the teaching of the essential and necessary

items of the language taught with which one cannot lose his or her way as a teacher" (p. 71). Similarly, infrastructure is the major concern of all participants which shows that unless classrooms' physical structures and technological tools are upgraded, the end result will not be satisfactory.

Although this bulk of feedback is necessary to improve all curricula, young learners' immediate and future needs along with those of the wider society remain to be unknown. Future studies should focus on these needs and opinions of all parties as well as those wider perceptions of our societies in relation to all social and cultural aspects of foreign language teaching.

This study has many limitations the most important of which is the small sample size. However, because it aims to collect data on a newly accepted curriculum about which few studies exist, this attempt should be seen as a valuable contribution to the field within the context of Turkey and in other countries where national curricula are put into practice in primary schools. However, future research should involve more parties along with teachers to understand various aspects of curricular issues affecting young learners' English language classrooms.

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AN EVALUATION OF CULTURAL REPRESENTATION IN PEDAGOGICAL TEXTS TO TEACH ENGLISH AS A FOREIGN LANGUAGE

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ABSTRACT

Even though the related literature indicates that the representation of target culture in coursebooks is essential, the studies on the effectiveness of teaching culture via coursebooks used in Turkey point out that these nation-wide used materials are either insufficient in terms of content and quantity of representation or have recently improved including cultural and intercultural elements. In order to identify the points requiring improvement and have already improved, material and text-specific inquiry of cultural elements represented is targeted for the present study. Therefore, this research study aims to present the quantitative data on the features of cultural elements presented in a B1 level coursebook *Yes U Can* published for the teaching of English in Turkey. All the reading texts included in the student book were examined via a control list adapted from a similar study. Even though the results of material analysis indicate two major gaps of cultural representation; namely, insufficient use of literary texts and not making cross-cultural comparison via presenting students' home culture, the selected material for analysis present frequent cultural content on: daily life; entertainment and leisure time activities; and school and educational life.

Keywords- Culture, English, teaching, coursebook.

I. INTRODUCTION

Culture, signifying the productions and contributions by a society and its individuals to the world heritage, is often identified as *large/big/capital 'C'* culture. Besides, the 'way of life' gone through in a society is referred to as culture with a *small 'c'*. Since communicative competence and knowledge on target language culture are interrelated issues, the literature on effective teaching of culture puts special emphasis on the importance of culture embedded language instruction. What is more, it is consented that the elements of capital 'C' culture and small 'c' culture are to be reflected in foreign language teaching materials in order to raise learners' target culture awareness (Pulverness, 1995; Tomalin and Stempleski, 1993). The dialectical relation between language and culture necessitates including cultural content into target language instruction.

Genc and Bada (2005) emphasize that when language students' knowledge about the target culture increases, their enthusiasm and motivation towards learning the language raise as well. Learners receiving instruction on culture while learning the language can infer different layers of meaning depending on the context used and identify the differences between native and target cultures (Kramsch, 1996; Peterson & Coltrane, 2003). Since culture and language cannot be considered independent from each other, the level of communicative competence is directly affected by how well the student handles culture

specific situations and discourse. As indicated by Devito (2006) culture has an influence on all types of communication varying from eye contact to developing relationships among people. Larsen-Freeman (2001) labels culture as the fifth skill along with reading, writing, speaking and listening; nevertheless, Kramsch (1993) indicates that culture is more than the fifth skill as it is fundamental and at the basis of communicative competence and comprehension. Nevertheless, language instructors and school curricula might usually offer language teaching devoid of culture component (Kramsh, 2013). Since culture has an indispensable share in language competence and comprehension, coursebooks and curricula should be designed in line with learners' needs concerning target language culture.

The way and extent of presenting culture is an issue questioned on 'the culture' represented in coursebooks published for the teaching of English as a foreign language (Stepleton, 2000; McKay, 2003). Nevertheless, incorporating culture and also using it as a means to teach language should be one of the features of the coursebooks selected for language instruction (Korkmaz, 2009; Byram, 1998; Cakir, 2010; Cortazzi, M. & Jin, 1999). Even though the related literature indicates that the representation of target culture in coursebooks is essential, the studies on the effectiveness of teaching culture via coursebooks used in Turkey point out that these nation-wide used materials are either insufficient in terms of content and quantity of representation (Cortazzi & Jin, 1999; Cakir, 2010; Sarac & Arikan, 2010) or have recently improved including cultural and intercultural elements (Demirbas, 2013; Celik & Erbay, 2013). In order to identify the points requiring improvement and have already improved, material and text-specific inquiry of cultural elements represented is targeted for the present study.

II. METHODS

This research study aims to present the quantitative data on the features of cultural elements presented in a B1 level, nation-wide used coursebook *Yes U Can* (Ozbek, Kumral & Orer, 2014) published for the teaching of English in Turkey. In order to specify the research scope only the reading texts were examined as they are regarded as ample primary source of data to provide quantitative information about the educational and cultural phenomena (Gal et al., 2005). All the reading texts included in the student book were examined via an adapted control list which was preliminarily developed for a similar-content study (Sarac & Arikan, 2010). In order to ensure the reliability of data analyzed, two different experts examined the texts independently via using the same tool of analysis and then held conferences to negotiate on the different itemization. 21 different texts were examined and analyzed through the checklist including two sections of 'point of view' and 'elements'. The section on view point represented in texts contained 8 different groups and the following section of elements represented in terms of culture included 22 different items in total. The research questions aimed to base the study on are:

1. What are the viewpoints represented in relation to cultural presentation of the target language in the pedagogical texts provided in the Turkish EFL coursebook?

2. What are the cultural elements represented in the reading texts included in the Turkish EFL coursebook?

III. RESULTS

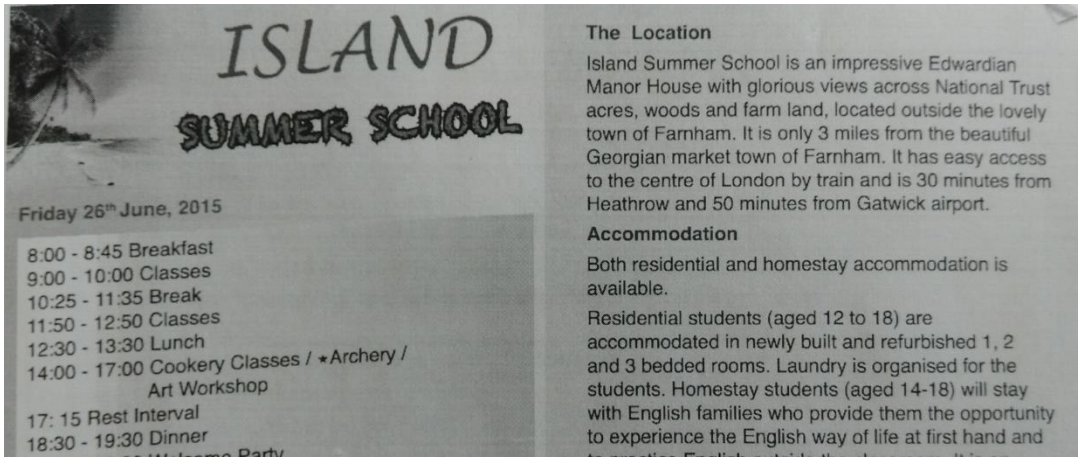
In terms of viewpoints represented in the pedagogical texts used in the coursebook selected, in five texts learners find the opportunity to identify the target culture by using their own experiences (1 mostly, 4 rarely), and six texts (1 mostly, 5 rarely) enable readers think and discuss their own culture as well. In none of the texts provided, readers are given a content to compare the target and local cultures. Three out of 21 texts (2 mostly, 1 rarely) represent intercultural and cross-cultural issues, and five texts rarely mention the contributions of the target culture to the universal culture. In only one reading passage, the target culture is rarely identified as superior to the other cultures. Finally, in two texts mostly and two other rarely, the target culture is approached critically. The results in relation to the frequency counts of the viewpoints represented are as follows:

Table 1
Point of view on representing culture in reading texts

POINT OF VIEW	Mostly (f)	Rarely (f)	Never (f)
Learner identifies target culture based upon his-her own experience.	1	4	16
Learner thinks and discusses his-her own culture as well.	1	5	15
Target and local cultures are compared.	-	-	21
Intercultural and cross-cultural context is included.	2	1	18
Contributions of the target culture to the universal culture are included.	-	5	16
Target culture is identified as superior to other cultures.	-	1	20
Target culture is approached critically.	2	2	17

The number of pedagogical texts included information on the daily life in the target culture is fifteen in total (4 mostly, 11 rarely). Another cultural element represented more frequently than others is entertainment and leisure time activities included in eight different texts (5 mostly, 3 rarely). School and educational life is also represented in eight different reading passages; 5 of them mostly covered this cultural item and 3 texts rarely. These three cultural elements can be regarded as the most frequently represented ones when all the texts and their content are taken into consideration. A sample extract for the texts provided on school and educational life is as follows:

Figure 1
Text on School and Educational Life



ISLAND
SUMMER SCHOOL

Friday 26th June, 2015

8:00 - 8:45 Breakfast
9:00 - 10:00 Classes
10:25 - 11:35 Break
11:50 - 12:50 Classes
12:30 - 13:30 Lunch
14:00 - 17:00 Cookery Classes / ⋆Archery / Art Workshop
17: 15 Rest Interval
18:30 - 19:30 Dinner

The Location

Island Summer School is an impressive Edwardian Manor House with glorious views across National Trust acres, woods and farm land, located outside the lovely town of Farnham. It is only 3 miles from the beautiful Georgian market town of Farnham. It has easy access to the centre of London by train and is 30 minutes from Heathrow and 50 minutes from Gatwick airport.

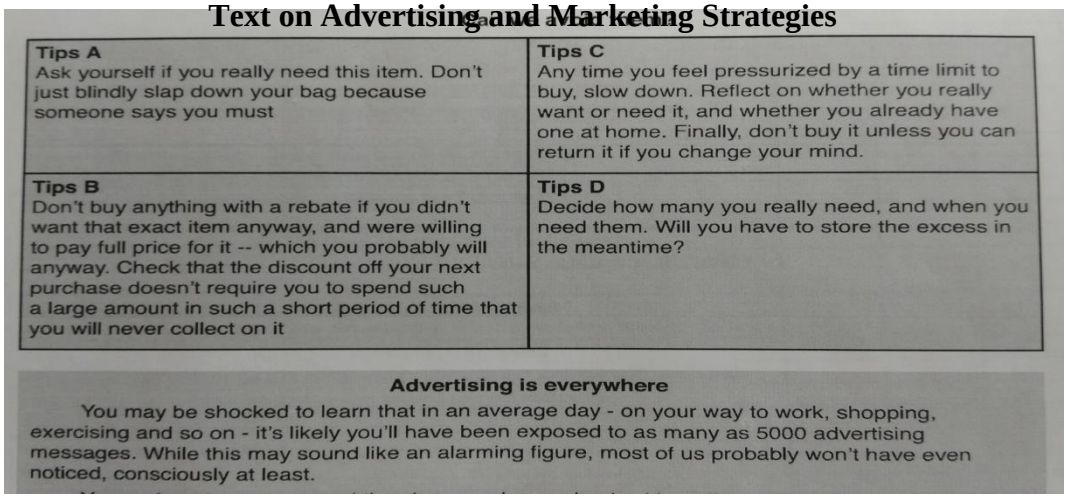
Accommodation

Both residential and homestay accommodation is available.

Residential students (aged 12 to 18) are accommodated in newly built and refurbished 1, 2 and 3 bedded rooms. Laundry is organised for the students. Homestay students (aged 14-18) will stay with English families who provide them the opportunity to experience the English way of life at first hand and

Learners are provided with five texts including the relation between target language and science (2 mostly, 3 rarely). People who contributed to target culture are mentioned in two texts mostly and 3 texts rarely. In addition, the relation between target culture and environment is represented in six reading passages (1 mostly, 5 rarely). Traditions, festivals and celebrations, as another group of culturally related items, are included in the content of six different texts; in 2 texts mostly and 4 texts rarely. Geography and natural events are touched upon in 3 texts mostly and 1 text rarely. On the advertising and marketing strategies applied in the target culture, 4 texts (2 mostly, 2 rarely) present the related issues within the reading content of passages. An example for the text including advertising and marketing strategies of target culture is given below:

Extract 2
Text on Advertising and Marketing Strategies



Tips A Ask yourself if you really need this item. Don't just blindly slap down your bag because someone says you must	**Tips C** Any time you feel pressurized by a time limit to buy, slow down. Reflect on whether you really want or need it, and whether you already have one at home. Finally, don't buy it unless you can return it if you change your mind.
Tips B Don't buy anything with a rebate if you didn't want that exact item anyway, and were willing to pay full price for it -- which you probably will anyway. Check that the discount off your next purchase doesn't require you to spend such a large amount in such a short period of time that you will never collect on it	**Tips D** Decide how many you really need, and when you need them. Will you have to store the excess in the meantime?

Advertising is everywhere

You may be shocked to learn that in an average day - on your way to work, shopping, exercising and so on - it's likely you'll have been exposed to as many as 5000 advertising messages. While this may sound like an alarming figure, most of us probably won't have even noticed, consciously at least.

Food and eating habits in the target culture are represented in a rare manner in 3 texts. Family and family relations are mentioned in 1 text mostly and 2 other texts rarely. Three texts rarely include information on history and historical artifacts. Besides, appearance and dressing habits are included rarely in 2 texts. One text mostly and another text rarely gives information on visual and plastic arts. Gender relations and issues are covered mostly in 1 text and rarely in another one:

Extract 3
Text on Gender Relations and Issues

THE WOMAN IN THE FIRE

1. Jennifer Lyne is a female driver and a driving instructor for a fire brigade. Her job is unusual for most of women and even most of the men.

2. She comes from a family of hauliers in the North-East of Liverpool. After spending time at uni, in the Merchant Navy and running the family haulage business and driving tipping lorries, she ends up with the fire brigade. She is a mother of a 5 - year - old boy and can compare her job every day to seeing her son walk for the first time.

3. Seeing new drivers driving fire engines successfully is so rewarding and fantastic for her. When she tells women what she does for a living, they nearly faint with envy. Last month, she went to a fire service conference in order to give the women tips on driving. They were loads of fire brigade employees from different regions of Britain. There were cooks, cleaners, admin staff, as well as operational firefighters. After the conference she organized a face to face meeting so that she could give more information about her job.

In none of the texts provided, information on religion, religious beliefs or rituals is covered. In addition, information on politics and political issues is overlooked and not included. Literature also, as well as literary text, is another cultural element not represented among the texts given in the coursebook. The detailed frequency analysis of the cultural elements represented in the selected materials is given in the table below:

Table 2
Cultural elements represented in reading texts

Cultural Elements Included	Mostly (f)	Rarely (f)	Never (f)
Relation between target culture and science.	2	3	16
Information on religion, belief and rituals.	-	-	21
Information on politics and political issues.	-	-	21
Visual and plastic arts.	1	1	19
Daily life.	4	11	6
Literature.	-	-	21

Music, songs.	1	-	20
Sports, sports activities.	-	1	20
People who contributed to target culture.	2	3	16
Relation between target culture and environment (animal, plant, nature-human).	1	5	15
Movies.	1	-	20
Diseases and health issues.	-	1	20
Food and eating habits.	-	3	18
Appearance and dressing habits.	-	2	19
Family and family relations.	1	2	18
Entertainment and leisure time activities.	5	3	13
Traditions, festivals and celebrations.	2	4	15
History and historical artifacts.	-	3	18
Geography and natural events.	3	1	17
School and educational life.	5	3	13
Advertising and marketing strategies.	2	2	17
Gender relations and issues.	1	1	19

IV. CONCLUSION AND FUTURE WORK

The most striking result gathered from the present research study is that no literary text or text on literature of the target culture is benefited while composing the body of selected passages of reading. As Parkinson and Reid Thomas (2007) emphasize, the initial reason to use literature in language teaching is that it provides cultural enrichment; secondly, rhetoric in literary texts present a model of language use for learners to improve their own language productions, and the most important of all is that literature is authentic so that it offers genuine language use. This research result on Turkish EFL coursebook supports the study conducted by Yildirim (2012) on English language coursebooks published by international companies. In the study, it is pointed out that rare and limited use of literary texts causes literature to be only a secondary source in coursebooks to improve learners' reading skills. The findings of a research study by Arikan (2010) on prospective Turkish teachers of EFL indicate that future teachers regard themselves to have sufficient knowledge on the target language but not knowledgeable enough on target culture. With respect to this finding, it can be stated that especially the coursebooks used in national education should support language teachers on cultural and literary aspects of language.

Another remarkable finding is that local culture has no place in the texts selected for reading. Sowden (2007) puts emphasis on the issue that teachers should take into consideration the cultures that students bring into the classroom and adds that also the teachers come to class with their own cultures. Putting emphasis on the target culture only

and ignoring learners' own culture may lead to insufficient cross-cultural learning opportunity. Byram and Planet (2000) identify learner-centeredness as the focal point of culture teaching, and advocate the idea that learners should be able to reflect on their own culture first in order to be introduced the target culture. Understanding initially their own culture, learners decentre from their culture and through making comparisons and interpretations they find a "third place" where they can keep their distance towards the target and home cultures and establish their interpretations of cultural differences and similarities (Karmsch, 1993). Therefore, in order for learners to develop awareness on target culture, the point of departure need to be their home culture and developing awareness and reflection on it first. Especially the coursebooks written by local writers may have more effective content to present such material of cross-cultural representation to enable a comparative look towards similarities and differences. Local writers' knowledge base and experience may serve as a great source of reference in material development and design.

Even though the results of material analysis indicate two major gaps of cultural representation; namely, using no literary texts or cross-cultural comparison via presenting home culture, the selected material for analysis present frequent cultural content on: (1) daily life; (2) entertainment and leisure time activities; and (3) school and educational life. Such cultural content might be regarded as motivating for target group of learners who are adolescents of the age fifteen and sixteen years. Since the teaching content and techniques should appeal to students' genuine interests (Brown, 1994), such content selection might considered to be preferred by taking into consideration the age range and interest-specific reasons belonging to the target group of learners.

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SLOW PACE TOWARDS TEACHING MATHEMATICAL SCIENCE IN NEPAL: A HISTORICAL PERSPECTIVE

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ABSTRACT

Mathematics teaching begins with human civilization. The ruler used to choose mathematician as prime adviser in many tribes and country. Mathematics was powerful tool for understanding economical situation and strength of ruler. In ancient Nepal teaching of mathematics starts with informal education provided by religious leaders thereafter in modern education system seems to follow the world's educational system. The aim of this paper is to present a brief historical background of the Nepalese mathematicians up to nineteenth century and highlight the transformation in mathematical science in the line with modern world. Secondary data and formal papers and informal publications were studied to explore the present situation of education. The study concluded that there is remarkable change in quality of education and there are sufficient human powers in the mathematical sciences in Nepal.

Keywords : Human development, Mathematics, Nepal, Science, Traditional

INTRODUCTION

Education as a system can be called the brain of any society and it is backbone of any system. Mathematics is a vast adventure in ideas, an exact science and truly saying the mirror of civilization. According to Perry [6], mathematical education began because it was useful, it continues because of the usefulness of its results. Now days, even the social sciences are becoming more and more mathematical. Most mathematical creations are the result of intuition. The direction of modern mathematics has without a doubt been greatly influenced by the developments in other disciplines. The mathematical sciences have changed significantly during the past few decades. The most obvious change is the enormous growth of mathematics. Even the latest scientific and technological developments have extended each branch of mathematics and have proved mathematics as a powerful tool for any scientific achievements.

The history of teaching mathematics is as old as the human civilization. Mathematics shows much more durability in its attention to concepts and theories than do other sciences. These days history of mathematics is a powerful tool for a disseminating an understanding of mathematics. We look at history as a way of motivating the learner to see the significance of the area being studied. We consider to history as a route to help the learner understand the path of development to a mathematical concept or process. With the history of mathematics, students will come to know that mathematics and science is a work of all civilizations and teachers will find more confidence in teaching. But the goals of mathematics education differ according to the country's socio-economic condition and the innovation of science and

technology in the society and the existing educational status of a country. Nevertheless, mathematics is taught in all levels of education in every country in the world. The history of mathematics reflects some of the noblest thoughts of countless generations. Nepalese mathematical system is highly influenced by the world's mathematical system.

The objective of this paper is to briefly analyze the history of mathematics in Nepal. In this paper, we have presented the history of mathematics in Nepal. In this paper, we have presented the history in condense form by subjecting to strict discipline, sketching the unfolding of a few main ideas and minimizing reference to other developments. It is hoped that, despite various restrictions; namely, unavailability of written documents on the history of mathematics in Nepal, we have been able to give a fairly honest description of the main trends in the development of mathematics throughout the ages and of the social and cultural setting in which it took place. The main work in the paper has been divided into two parts: Historical Background and Modern Period. Historical background includes the survey work of mathematical activities in Nepal during Lichchavi Era (143 – 1243 A.D.), Malla Era (1243 – 1493 A.D.), Shah Era (since 1493 A.D.).

Historical background In 1918 A.D., a formal and systematic way of teaching Mathematics in intermediate level has been firstly started in western manner in Tri-Chandra College. But in 1853 A.D., Durbar school was started and Mathematics had been taught in English medium. In this school, only the higher-level students were allowed to study in this school. So mathematics subject were not familiar to common people in those days in Nepal. In the period of Rana Prime minister Dev Samser, many other schools were opened throughout the country and in terms of earlier Astrology, mathematics had been taught. Durbar school was affiliated to Calcutta University. Students had to go to Calcutta to appear matriculation examination and then they had to pass to get the certificates. In 1890 A.D., Rana Prime minister Chandra Samser was the first Nepali who had appeared that matriculation examination of Calcutta University and passed the mathematic subject in the age of 20 years. During this period, the major subjects in mathematics curriculum were Algebra, Arithmetic and Geometry. The textbooks were from the famous British mathematician of that period. Algebra from Knight and Hall (1887 A.D.) had not been introduced at that time. In 1877 A.D., Sanskrit school was first established. In terms of jyotish shastra, basic mathematics courses had been taught in Sanskrit schools. In this school, there were separate teachers for teaching mathematics and astrology. Teachers teaching Jyotish were teaching popular mathematics book written in Sanskrit.

About 125 years ago, there were no mathematics books written in Nepal. Students in those days used to go to Kashi (Banaras) to learn Sanskrit and there, they were taught famous books on mathematics like Siddhant Siromani of Bhaskaracharya (II). Among four units of Sidhant Siromani, Lilavati and Bijganita (Algebra) were quite famous. So it is found that there was a great influence of Indian mathematics culture in Nepalese system. After returning back, teachers used to teach Bhaswati, Lilawati (Paati mathematics), Algebra, Geometry. It is not possible to teach all parts of Bhaskaracharya's Lilabati and Algebra to junior levels as those books are abstract books in mathematics. It is found that Yadav

Chandra Chakravorty's arithmetic is about 10 times larger in size than Lilabati but only one fourth of the content from Lilabati has been included in Chakravorty's arithmetic. Geometry of Jagannath was the core subject to teach at that period. Since the trigonometry of Baskaracharya's geometry was included in the curriculum so the teacher's used to teach trigonometry or, Jyotish based on Shiddhant Shiromany book of Bhaskaracharya II. In this paper, we shall concentrate only on the works and contribution of Nepali Mathematicians. On the basic of old Vedas, Jyotish and Surya Sidhanta, it is found that the first Jyotish book in Nepal "Sumati Tantra" was written in 556 – 960 A.D.. But only the book is available and its writer is still not known, and it is interesting to note that it was written in Kathmandu valley. Latter in 1409 A.D., a great astrologer loret Dharmapati Bardhan translated this sumati siddhanta in the form of Jyotish Book. Even in Malla Era, for future prediction and to make calendars easily, astrologers usually took the help to this Sumati Tantra and Sumati Siddhanta. Sumati Tantra has been purely written in Sanskrit whereas Sumati Siddhanta has been written in mixed Language of Newari (local language in Kathmandu Valley) and Sanskrit. It is found that even in Lichchavi Era and mid-period, these books were found useful for astrologers for their calculations. Many Great astrologers had made suitable callenders based on Surya Sidhhanta. In 1099 A.D., a famous astrologer Satananda from Udise state (India) had made Bhashwati book. This book was so populars that was found teaching as mathematics courses by Jyotish teachers at many places. In connection with this, in 1494 A.D. (during Malla Era), famous teacher Daibagnya Balbhadra from Jumla region had made Balbodhani Tika of this Bashwati book as a text book of mathematics. Since Bhashwati had helped a lot of count calendars (panchang) and also to help teaching addition, subtraction, multiplication and division, etc as basic mathematics books, so Bhashwati had been as the first book of supplement mathematics. There is a strong relationship between mathematics and Astrology. So in old ages, people used to go to jyotish teachers to learn mathematics. Jyotish helped their students to learn mathematics. Assignments from Bhashwati had helped them for complete calculation in Panchang. For more mathematics knowledge, people used to read Lilabati. Bhashwati was so popular in different part of country that many of hand written Slokas (Tikas) are found from Bhashwati at different places. It is found that some of the tikas made by scholar Bal Bhadra from Jumla was even popular in India. Famous Nepalese Royal strologer Laxmi Pati Pande (1758 – 1813 A.D.) in the period of Bahadur shah (1757 – 1797 A.D.) had written the tikas of Bhashwati and started his mathematics and Jyotish study. He is found to be the first Nepali astrologer that has written the Nepali meaning of his slokas. His contribution has shown that Bhashwati was the initial textbook of mathematics in Nepal then after only students of high level used to read Lilabati for more knowledge in mathematics. Astrologers had calculated planets-stars calendar and eclipses on the basis of this Bhashwati. They taught their students making Tikas of this book. Laxmi Pati pande is known to be a great theologian in Nepal. He was honored as a royal astrologer. He was not only the mathematician but he had a nice idea about the timings of stars – planets counting. In the kingdom of Ran Bahadur Shah, he had made a solar watch. Since it was made following the classical jyotish Rules, so it had helped a lot to know the time at that time. He translated many important articles from mathematics & astrology in Nepal. We find the list of about 40 books that was either copied or written by

Laxmi Pati Pande in Laxmi Pati Sangraha. Among these books, notable books are Ratnadeep, Lilabati, Bhashwati, Tika, Griha Laghava Kalarnav Dipika, etc. The son of Laxmi Pati Pande, Lila Nath Pande was also a Royal astrologer and great scholar of mathematics. It is found that he had written a book in Nepali namely Siddhant Jyotish, but it had not been published. It is seen that perhaps this book was the first written unpublished book in the history of Nepalese mathematics. The last published Tikas of Bashwati was from Tika Ram Panthi in A.D. 1931.

The first book of mathematics written in Nepali language is found to be "Wyokta Chandrika" and it was published in 1883 A.D. This book was based on the Lilabati of Bhaskacharya (II). The great mathematician and teacher Pd. Gopal Pande (1847 – 1920 A.D.) wrote this book. He was the great mathematician of that period. He had shown his individuality and originality to find out square root and cube root. He has published his book and made it as the textbook of mathematics. His book was the best book for teaching mathematics at that time. Pd. Gopal Pande was the first to formulate Trizoidiacle Rule [3], useful for calculating square and cube roots. This new approach is considered as a remarkable contribution of Gopal Pande in Nepalese mathematics.

From 1883 – 1914 A.D., Pd. Gopal Pande had written four editions of his books and only his third edition was published in Hindi to make this book familiar in India too. Due to his contributions and achievements, Gopal Pande was a great scholar and theologian of mathematics in Nepal. In the history of mathematics of Nepal, Gopal Pande is not only the first who had written and published his mathematics book in Nepali language but he is the first person who analytically argued on the others' mathematics - Jyotish articles with his own proof and published many research papers. He had proved his capabilities in many circumstances. In 1884 A.D., first calendar was published in Nepal. In this calendar, it was quoted that there is an emergence sending of lunar eclipse of Aswin Sukla. But Gopal Pande with his own calculation claimed that it is false. And after a long discussion, it was found that Gopal Pande's result was true. Due to this achievement, he was honored with Royal Astrologer. Thus, Gopal Pande was the first writer of mathematics books of Nepal, great mathematician and scholars of other subject too. His popular book is "Lokanu Smiriti". It deals with a nice explanation of Loktantra. He had also a sound knowledge of Architecture and engineering. His engineering idea helped the then Government to make a huge ground so called "Tundikhel", which is located at the heart of Kathmandu city. Other famous scholar and writers in mathematics were Noor Dutta Pande (second son of Gopal Pande), master Meru Nath Pande, Kavi Raj Pande, Ganga Prasad Shrestha, etc. Noor Dutta Pande had written first, second, third and fourth parts of "Gorkha Bijaganita". This shows his great ability of algebra. Also he has composed the mathematics book so called "Bichitra Ganita". Master Meru Nath Pande and poet Raja Pande had written "Saral Bija Ganita" in Nepali language. Another great scholor Nay Raj Pant [2] has highly appreciation the contribution of Pandita Gopal Pande and paid all attribute to this book.

Twenty five year before Laxmi Pati Pande, Royal priest of famous king Dravya shah in the 15th century A.D., Chakra Pani Aryal, had written a Jyotish book in Sanskrit namely "Uttan Mathematics" that was useful for calculation of solar and lunar eclipses. This book was

published by scholar Padma Nav Keshari Aryal in 1934 A.D. and freely distributed to other scholars. Some other books of Jyotish written by Chakra Pani are Ganita Chudamani, Grahan Tatwa, Surya Grahan Sarani, etc. This has been proved on the basis of available documents in Bil Library and National Library. Also these facts have been proved by the research works of both the sons Mahesh Raj Pant and Dinesh Raj Pant of Shree Naya Raj Pant. Ganga Prasad Shrestha had written a textbook so called "Ganita Sagar". Also Bekhalal had written Saral Anka Ganita and that was the textbook in the schools during the time of ruling Prime Minister Shree Chandra Samser.

Other remarkable writers of mathematics book in Nepal are Pahalman Singh Sunwar, Raja Prithvi Bahadur Singh, etc. About seventy years ago in 1833 A.D., one Nepali lady Chandra Kala Dhananjay has written and published "Shishu Bodhini Ragini Ganita", in Slokas form. In this book, simple addition, multiplication, divisions have been explained in simple way to understand. It includes two parts. She has been supposed to be the first lady mathematician and teacher in Nepal who had a sound knowledge of mathematics at that time. No lady mathematician has been seen before and after her to have such ability in mathematics. There is a still lot of research work to do about her contributions to Nepalese mathematics.

While talking about mathematics books in Sanskrit, Nepalese Mathematicians have also written both mathematics and Jyotish books in Nepal. A great scholar Shree Nay Raj Pant (1913 – 2002 A.D.) and group of his students namely Mangal Das Manandhar, Shankar Man Rajbanshi, Gautam Bajracharya, Mahesh Raj Pant and Dinesh Raj Pant (1965 – 1967 A.D.) have published many articles about some famous Nepali mathematicians and their contributions in the history of Nepalese mathematicians. Pd. Nay Raj Pant first time translated the formulae of old Hindu Trigometry as "Vyakta Ganita" with various examples and published it in Nepali language. This book is the collection of articles published by Nay Raj Pant in the journal PURNIMA. This is the first journal in Nepal established in V.S. 2021. Mangal Das Pradhanang, a student of Nay Raj Pant, was the first to graduate in Mathematics from Tribhuvan University in V.S. 2024.

In nineteenth century, we find some books translated in Nepali language. Among those, we have Arithmetic of Narendra Mani Acharya that was translation of arithmetic of Yadav Chandra Chakravarti. Similarly, Nepal Bhasa Prakasiri Samiti has published "Nepal Arithmetic" in 1834 A.D., similar to the arithmetic of Chakravarti. Its language is grammatically true. Mathematics words in English used in this book have been translated by Nepali words in correct manner. Various high standard schools and other public schools had followed his book as textbook and up to high grades, this book had maintained the standard and was taught by teachers appreciating it.

It is found that the trend of writing books of mathematics in Nepal has been started just before 250 years ago at the time of writing books on mathematics and astrology. Later on, some other books on mathematics and astrology have been published in Nepal. For example, Pandita Harinath Pokhrel from Gorkha has published books like the Bramhand Darpan in 1913 A.D., Miti Drarpan in 1922 A.D. and Panchanga Darpan in 1928 A.D., etc in Nepal.

MODERN PERIOD

In 1947 A.D., both B.A. and B.Sc. in mathematics were started in Tri-Chandra College. After one decade in 1957 A.D., T.U was established first time in Nepal. In 1959 A.D., M.A./ M.Sc. mathematics classes were started. Due to lack of teachers in mathematics, teachers were hired from India under Colombo Plan Scheme. There were about 30 - 32 students in first batch of mathematics classes in the master level. Only four students had passed the final examination. Bengali mathematician Prof. Asutosh Ganguli was the first head of Department in Master level mathematics courses at Tri-chandra College. In 1968 A.D. (Bhadra), the classes were started at the Central Department of Mathematics at Kirtipur. Not only the Colombo Plan Scholars, but also Scholars from Statistics Department, Government services, Professor of Economics, had helped teaching related mathematics courses. Rest of the teachers was Nepali scholars. Semester system started in mathematics in 1973 A.D. Students had to pass 4 semesters in 2 years and the pass mark was 20. Internal evaluation in classes was compulsory. In each paper, Students had to get 8 marks out of 20 marks as an internal evaluation. It continued for 6 years. During these periods, both syllabus and textbooks were twice reviewed and modified. Since 1957 A.D., mathematics courses were divided into 8 papers, among 2 were elective. In 1st year, there were four papers and in second year, there were four papers. Students had to pass all the papers. In the earlier syllabus of mathematics courses, there were many subjects like Algebra, Analysis, Static and Dynamics, Differential Equations, Spherical trigonometry, Astronomy, Complex Variable, Statistics, Quantitative mechanics, Relativity, etc. Now days, these courses are not taught and some modern courses have been introduced like Topology,

Functional Analysis, Numerical Method, etc. In 1997/98, the syllabus had been re-evaluated and many of the master level courses have been kept in graduate level mathematics curriculum. Now days a curriculum has been extremely modified. The attraction in mathematics has been increased. Move than one dozen Ph.D. holders are available in Nepal. Since 20 years, central department of mathematics of Tribhuvan University has been publishing research journal "Nepali Mathematical Science Report". But still we are lack behind the recent worldwide development in mathematics. Teaching approaches have been improved.

In the past one decade, Nepalese higher education system has undergone sudden expansion from one university to five universities. The existing five universities in Nepal are Tribhuvan University (1959), Mahendra Sanskrit University (1986), Kathmandu University (1991), Purbanchal University (1995) and Pokhara University (1996). The detail of mathematical activities such as various courses, curriculum, evaluation schemes, teaching aspects, teachers' training, research activities and various organizations relating to mathematical activities in Nepal, has been briefly explained in the paper of Tuladhar and Jha [9]. Looking back the need of people, Nepalese Government is in process to establish some new universities. Thus, there will be more programs in mathematics and so we expect more mathematical activities and achievements in near future.

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USING DYNAMIC SHEAR RHEOMETER TO STUDY THE RHEOLOGICAL PROPERTIES OF MALAYSIAN'S ASPHALT BINDER

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ABSTRACT

Several road pavement distresses are related to rheological properties of bitumen. Rutting and fatigue cracking are the major distresses that lead to permanent failures in pavement construction. There is thus growing demand for the study the rheological properties of bitumen using high accuracy device such as Dynamic Shear Rheometer (DSR). This paper aims to study the rheological properties of three grades of virgin bitumen 40/50, 60/70 and 80/100. Frequency sweep strain controlled test and penetration test has been conducted to investigate the rheological properties of the three grades of bitumen. The results shows that value of G*, G', G'' and the viscosity are higher in harder bitumen and its match with the penetration results.

Keywords: asphalt bitumen; Rheology; viscosity; frequency sweep; Shear modulus.

INTRODUCTION

DSR has been used by many researchers as a high accuracy device. The Kinexus rheometer which is available in University of Technology Petronas, is an advanced modular rheometer system designed to meet the user's rheological requirements efficiently. Its motor technology gives very accurate control of shear stress/strain on arbitrary profiles of the sample. Two sizes of samples can be loaded to this machine, 25mm diameter with thickness of 1mm and 8mm diameter with thickness of 2mm.

Penetration test

To examine the consistency of a sample of bitumen by determining the distance in tenths of a millimeter that a standard needle vertically penetrates the bitumen specimen under known conditions of loading, time and temperature. Penetration test is one of the most common conventional tests, it is used to classify the bitumen to grades. Penetration value normally used as the grade of the bitumen. This test conducts for the 3 types of bitumen to specify the grade of each type. The harder the bitumen the higher penetration value will be shows up in this test. The sample is melted and cooled under controlled conditions. The penetration is measured with a penetrometer by means of which a standard needle is applied to the bitumen specimen under specific conditions. The penetration apparatus (Figure 2) is specified in many standards throughout the world but has always the same basic requirements as ASTM D5. Specimens are prepared in sample containers exactly as specified (ASTM D5-97) and placed in a water bath at the prescribed temperature of test for 1 to 1.5 hours before the test. For normal tests the precisely dimensioned needle, loaded to 100 ±0.05 g, is brought to the surface of the specimen at right angles, allowed to penetrate the bitumen for 5 ±0.1 s, while the temperature of the specimen is maintained at 25 ±0.1 °C. The penetration is measured in tenths of a millimeter (deci-millimetre, d-mm). Make at least three determinations on the

specimen. A clean needle is used for each determination. In making repeat determinations, start each with the tip of the needle at least 10 mm from the side of the container and at least 10 mm apart.

Frequency sweep strain controlled test

This test runs a frequency sweep over a range of frequencies as inputted by the user at run time. Frequency sweep test have been conducted in frequency range (1-100) rad/s and the test has repeated in different temperature (40-10) °C to investigate the effect temperature on the rheological properties of different grades of bitumen. Spindale 8 mm in diameter used in this test and the sample thickness was 2 mm. the samples loaded in between the base plate and the Spindale and it is placed in temperature control room. the test shall be started only after the temperature has remained at the desired temperature for at least 10 minutes according to AASHTO T315-10.

RESULTS AND DISCUSSION

Penetration test results: Penetration test results shows that the three types of bitumen meets the requirements as the penetration value of each type is within the limits. The average penetration value of bitumen 40/50pen is 42.2 which is between 40 and 50. The average penetration value of bitumen 60/70pen is 62.1 which is between 60 and 70 while the average value of 80/100pen is 84.5 which is also meets the requirements. Table 1,2 and 3 shows the full results of 3 samples of bitumen for each type of bitumen.

Table 1, penetration values of bitumen 40/50pen

Sample	Penetration 1	Penetration 2	Penetration 3
1	43	42	42
2	43	43	41
3	42	43	42

Table 2, penetration values of bitumen 60/70pen

Sample	Penetration 1	Penetration 2	Penetration 3
1	64	61	62
2	63	62	61
3	60	64	62

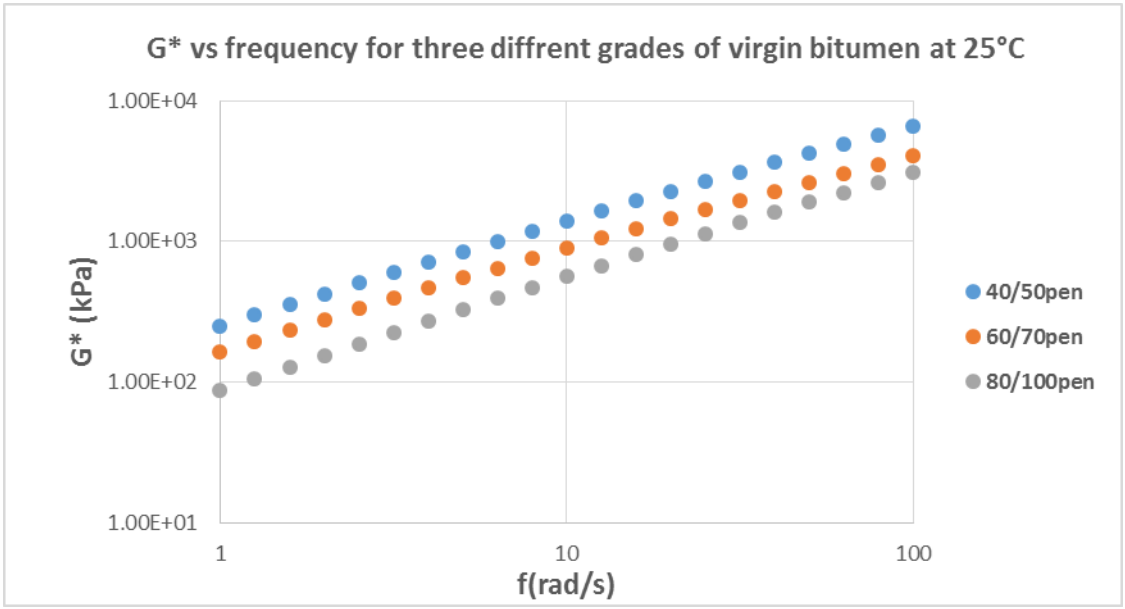
Table 3, penetration values of bitumen 80/100pen

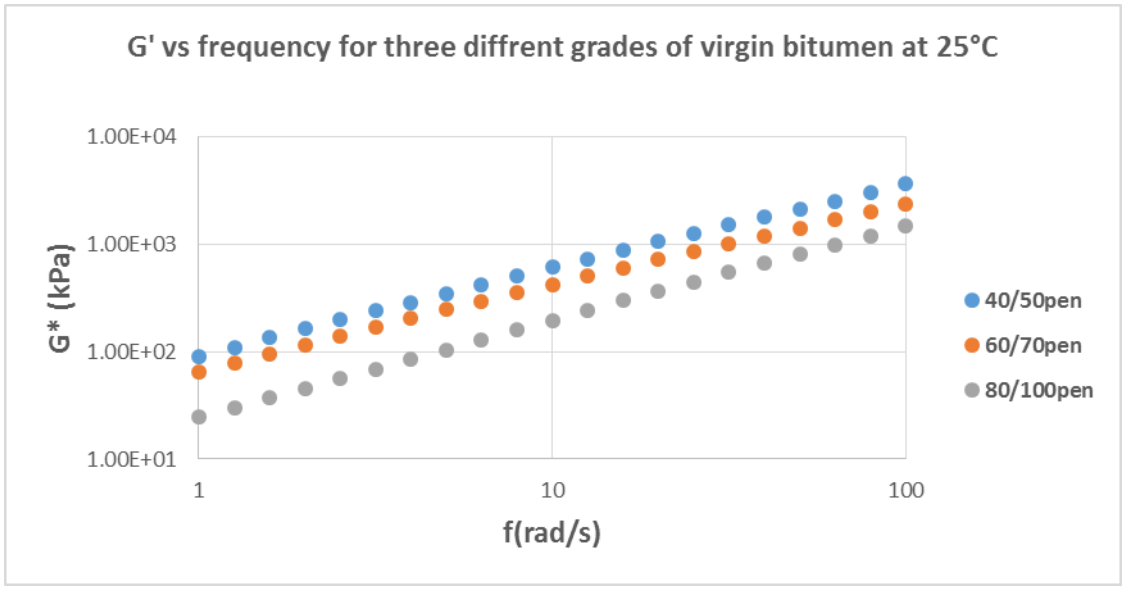
Sample	Penetration 1	Penetration 2	Penetration 3
1	84	83	83
2	84	85	83
3	86	86	87

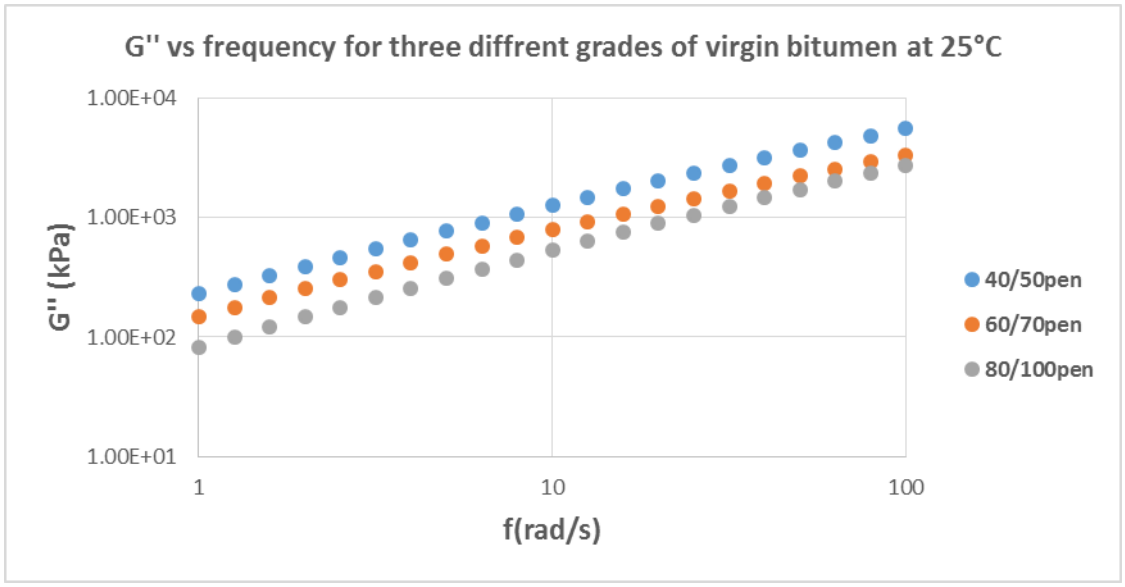
Frequency sweep test results:

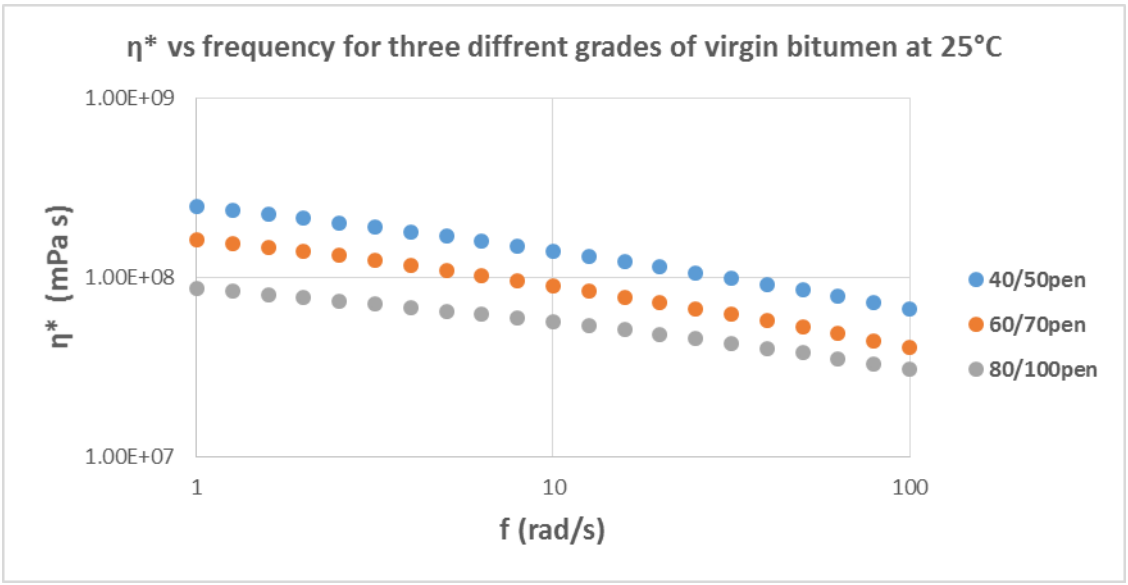
Conducting frequency sweep test in different temperatures and different frequencies helps to

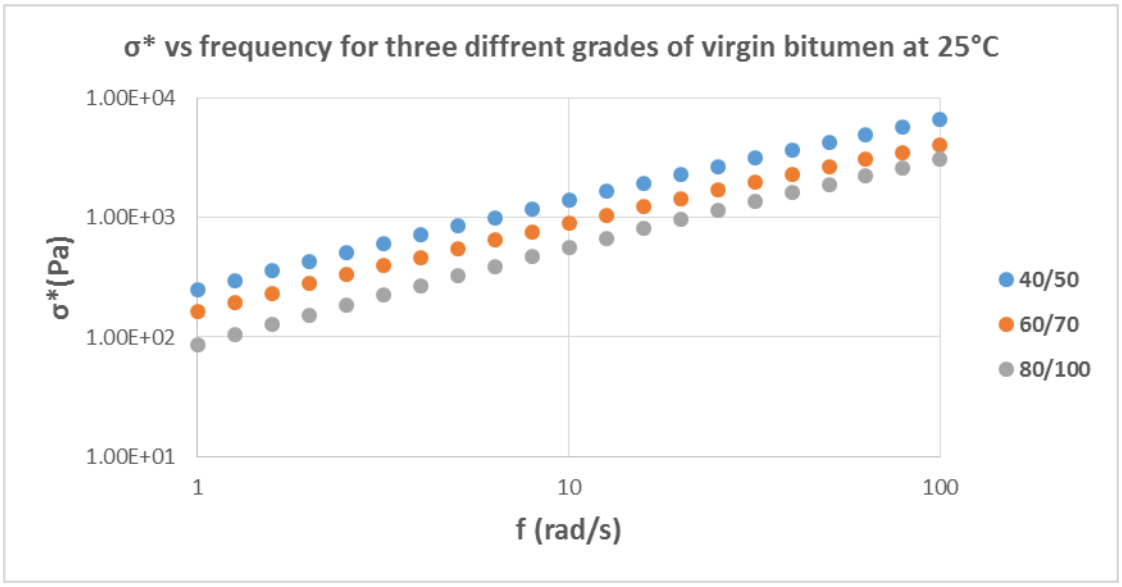
understand the changes in the rheological properties under different conditions. Shear modulus (complex component) G*, Shear modulus (elastic component)G', Shear modulus (viscous component) G'', Shear viscosity (complex component) η* and Complex shear stress σ* all these increases as the frequency increases as shown in figure 1, 2, 3, 4, 5.



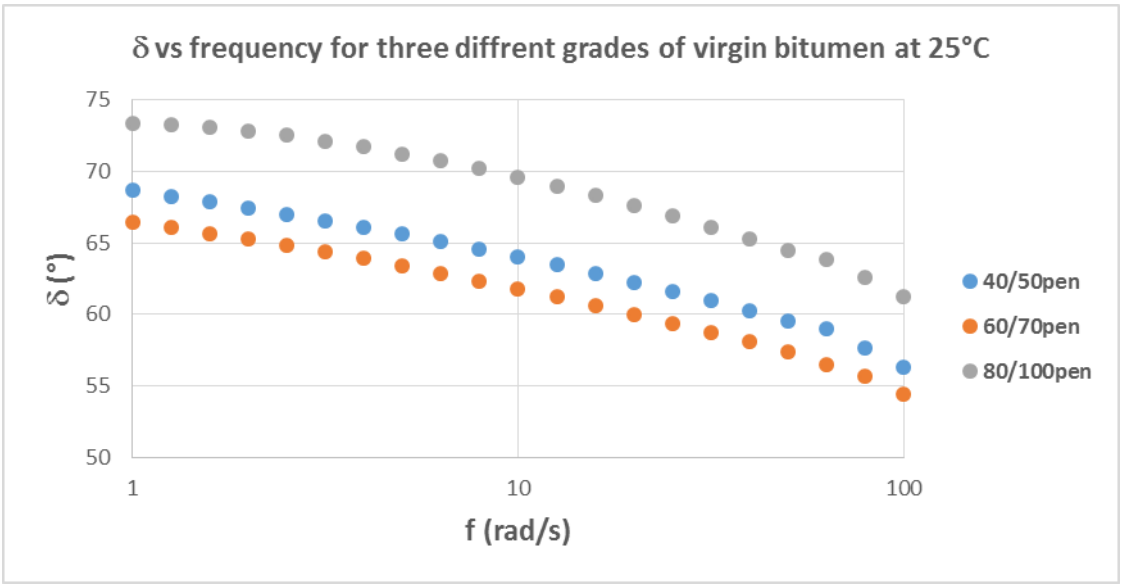



G'' vs frequency for three diffrent grades of virgin bitumen at 25°C
1.00E+04
1.00E+03
1.00E+02
1.00E+01
G'' (kPa)
1
10
100
f(rad/s)
40/50pen
60/70pen
80/100pen

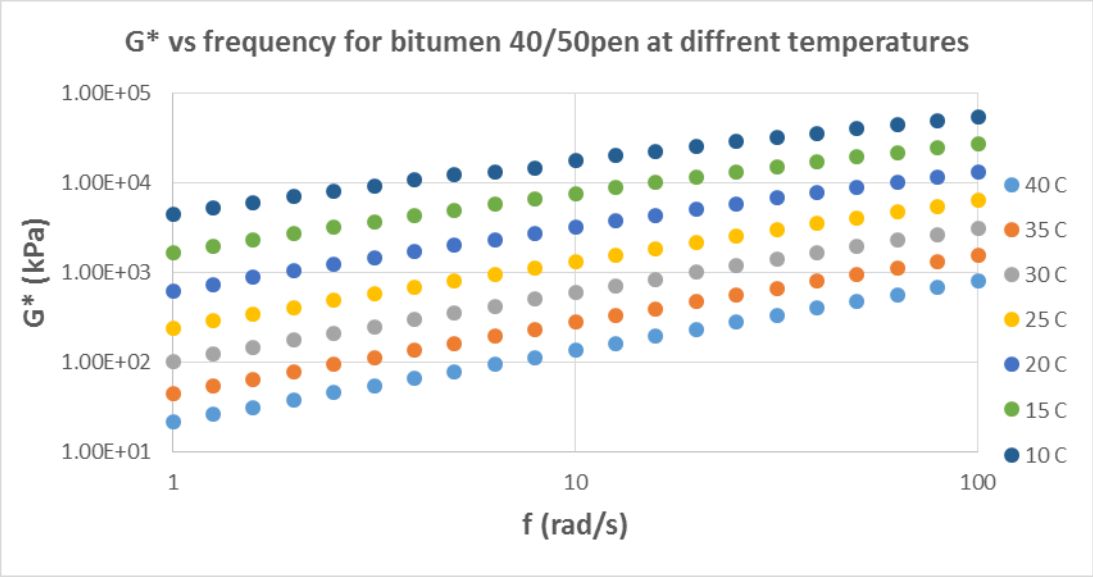

η* vs frequency for three diffrent grades of virgin bitumen at 25°C
1.00E+09
1.00E+08
1.00E+07
η* (mPa s)
1
10
100
f (rad/s)
40/50pen
60/70pen
80/100pen

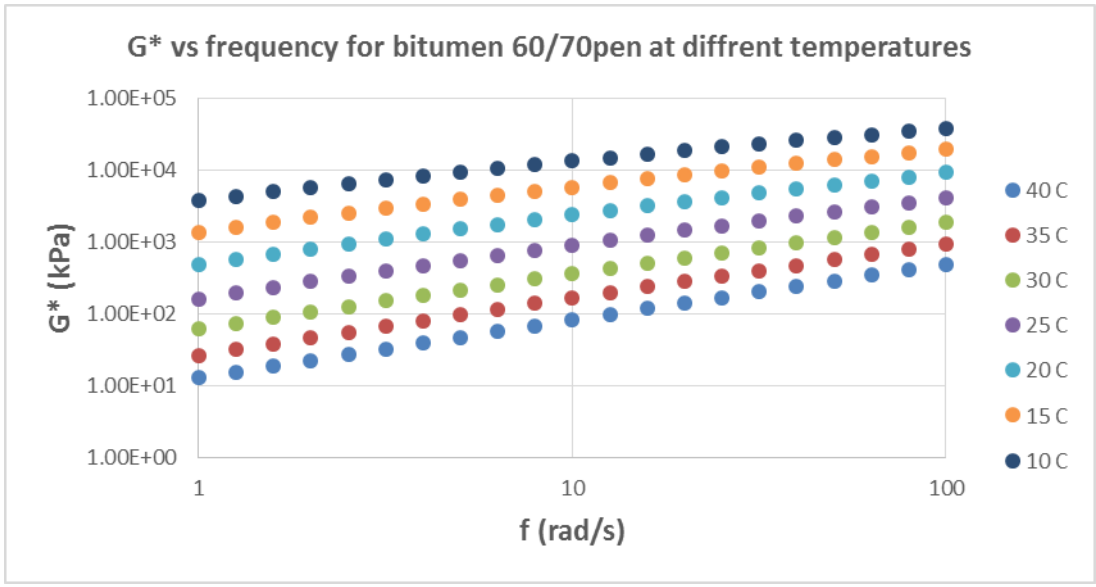


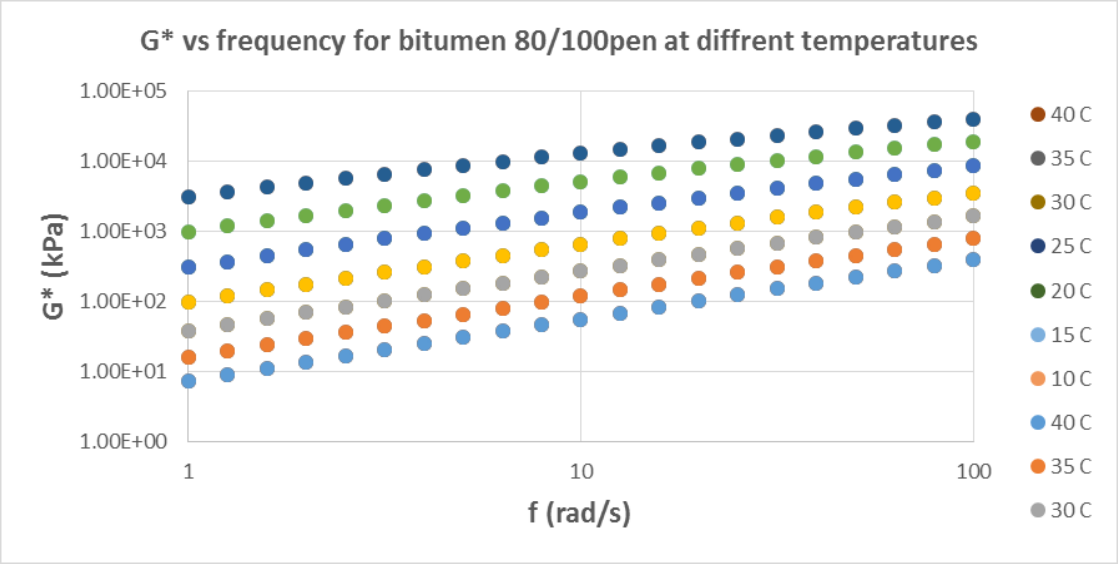
The phase angle decreeses as the frequency increeses as shown in figure 6.



The viscosity of bitumen increeses in the lower temperature as the bitumen getting harder therefore the values of shear modulus (complex component) G* increases as the temperature decreases in the three types of bitumen as shown in figures 7,8 and 9.


G* vs frequency for bitumen 40/50pen at diffrent temperatures
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
G* (kPa)
1
10
100
f (rad/s)
40 C
35 C
30 C
25 C
20 C
15 C
10 C


G* vs frequency for bitumen 60/70pen at diffrent temperatures
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
G* (kPa)
1
10
100
f (rad/s)
40 C
35 C
30 C
25 C
20 C
15 C
10 C



CONCLUSION AND FUTURE DIRECTIONS

From the preliminary results it can be concluded that DSR can use as an accurate device to study the rheological properties for asphalt binder. Frequency sweep test results shows that the harder bitumen presents higher viscosity and higher values of G*, G'and G". Penetration test results shows that harder bitumen presenting higher value of penetration which can be linked to frequency sweep test results as its classified the bitumen in the same order from harder to softer. The frequency sweep test conducted at different temperatures started from 40°C to 10°C, the viscosity, G*, G', G'' increases as the temperature decreases as the bitumen getting harder in the lower temperature. The researcher intended to modify the virgin bitumen grade 80/100 pen by using ultra-fine fillers therefore frequency sweep test will be the core test for the modified bitumen and the results will be compared with the virgin one. Having the rheological properties of three grades of bitumen are expected to help to relies when the modifier start changing the grade of bitumen as its making it harder.

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AIRSOFT AS A WAY OF REUSING POST-MILITARY AREAS

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ABSTRACT

This paper presents the results of a study on preservation of ex-military facilities that was conducted in 2013/2014 by the Faculty of Architecture of the Poznań University of Technology. The study focused on the issue of reusing and preserving historic post-military buildings. Its objective was the verification of possibilities for adapting post-military areas scattered around the Greater Poland Voivodeship for the organization of games, which would more or less employ military tactics. The paper introduces a definition of paramilitary sports, which was formulated for the purpose of the author's doctoral dissertation. Results of the analysis of current trends in adapting land to the needs of Airsoft games are presented, as well. The acquired data was applied to the process of creating a theoretical model of a paramilitary sports center. The model was then used to evaluate features of former military facilities with consideration for their prospective adaption as airsoft game fields. In correlation with the historic value of the analyzed facilities, the results of the evaluation allowed the author to produce a list of sites of military architecture, located across the Greater Poland Voivodeship, that present great potential for the above-mentioned form of re-employment. The paper concludes that the theoretical model for paramilitary sports centers is an efficient tool for evaluating the suitability of prospective locations for airsoft games and helps to properly develop the area in terms of its functionality and spatial layout. The results of the study proved that the model can be applied to all former military facilities in Poland that still remain unadapted. The study also exhibits the outcome of cooperation between the Faculty of Architecture, the Military Academy of Land Forces in Poznań, and the Poznańczycy Group that looks after one of the preserved Prussian infantry shelters in Poznań.

Keywords: military architecture, post-military brownfields, paramilitary sports.

1. ABANDONED POST-MILITARY FACILITIES IN THE REGION OF GREATER POLAND

1.1. Post-military facilities

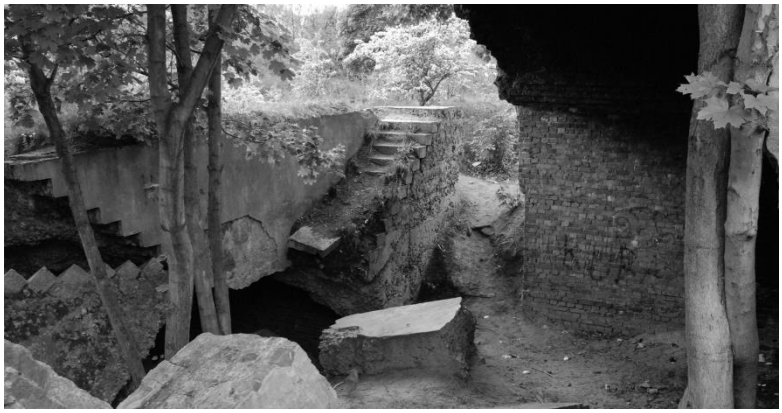
Due to its location on the map of Europe as well as its rich history, the region of Greater Poland has witnessed a number of wars and armed conflicts. For this reason, it is pitted with disused military facilities, which picture the evolution of fortifications that happened over a span of centuries.

Ineffective strategies for preserving and reusing such places lead to the devastation of valuable historic post-military facilities. Fortifications that survived from the times of Festung Posen are unique on a European scale. Yet, they have been left to deteriorate. Fine examples of the Polish military engineering of the 1920s and 1930s are falling into ruin. Forgotten military complexes and bases slowly disappear, remaining hidden deep in the woods or being ransacked and damaged. In relation to the prevalence of degradation, the following research question was formulated: how to cease the process of degradation of historic post-military facilities and then re-employ them to provide urban stimulation of their surroundings?

In the region of Greater Poland, there are several dozen recently decommissioned military facilities, including proving grounds (in the vicinity of Okonek), shooting ranges (e.g. in Biedrusko and Gniezno), bases of air defense missile divisions (five bases surrounding Poznań), posts of signal corps, military airplane guidance stations (e.g. in the vicinity of Września), fuel and lubricant depots, as well as barracks and military staff buildings.

The evolution of military strategies and tactics, the improvement of conventional weapons, the development of new types of weaponry, and the advancement of military technology ultimately deprived many facilities and complexes of their military function. The upheaval in the construction of fortifications was imposed by the introduction of aviation to the battlefield. Changes in the political systems of Central European and Eastern European countries that were taking place in the 1990s resulted in vast numbers of military premises, located both in urban areas and woodlands, being vacated by the army.

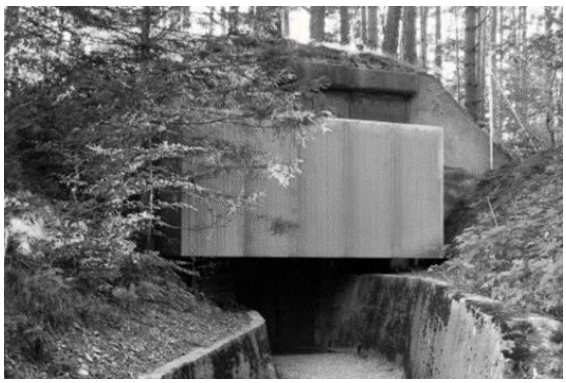
Since 1990, the Polish Armed Forces have been undergoing the process of restructuring and modernization. The replacement of obsolete equipment is accompanied by infrastructural changes. Decommissioned military facilities have been transferred by the Military Property Agency into commercial real estate. Some of them were returned to the State Forests, while others were traded or handed over to local self-governments [1]. Unfortunately, change of ownership usually leads to further deterioration rather than improvement. Unprotected facilities are ransacked, damaged, or demolished. Regardless of the their historical value, they gradually disappear among greenery or make room for new residential developments. These places are not mentioned anywhere else than on websites administered by military enthusiasts or web portals that gather ex-soldiers.



Photograph 1. Fort IV in Poznań (author: A. Siniecki). Photograph 2.

One of the most common solutions for protecting valuable examples of military architecture is the establishment of culture parks, where the historic military facilities can retain their original form and help educate young generations. Transformation of such places into museums or memorials is the best possible way of honoring their historical value. This kind of protection should be employed for the most valuable and most important historical sites. Another common way of re-employing former military buildings is the conversion into residential premises, which entails a more severe interference in the historic architecture. Across the world, improving, remodeling, and re-employing to new uses remain among the most popular methods for preserving historic military facilities. However, due to the diversity – in terms of location, form, function, and time of construction – not all post-military sites are suitable for such transformations or high costs of such conversions make them economically inviable.

Photograph 3. The Angebauter Tarnrucksack Cultural Center located in the former World War II bunker in Fläsch, Switzerland [2].



Photograph 4. Granary lofts in historic barracks in Gliwice (design: Meduza Group) [3].

The potential for revitalization of decommissioned military facilities has been already noticed by an array of EU institutions. Economic stimulation of post-military areas provides an opportunity for erasing differences between regions[1] [4]. In the United States, the Office of Economic Adjustment (OEA) has been supporting local communities in developing sustainable strategies for re-employing abandoned military bases since 1961 [5]. The above-mentioned undertakings are aimed at putting the economic potential of such areas to work and therefore they are prepared for commercial or residential development. According to the OEA's report, that was published at the end of 2007, these actions provided more than 140,000 new jobs in 73 decommissioned military bases [6]. In such cases, the recommended practice is the employment of historical and military values of buildings located in defunct bases in the development of regional tourism. Across the world, the phenomenon known as heritage tourism keeps gaining popularity, especially its sub-branch that is oriented towards military history. Gatherings of military enthusiast and historical reenactments are attended by crowds of visitors. Such events are organized in Poland, as well, e.g. the yearly military vehicles show in Borne Sulinowo, the Poznań Fortress Days, and annual reenactments of the

[1]Participants of consecutive editions of the INTERREG program benefit from knowledge and experience of those cities that have already been successful in re-employing disused military facilities. Examples of such cities include Utrecht in Denmark, Cartagena in Spain, and Medway in Great Britain [4].

Battle of Warsaw. However, despite their reputation and rather good publicity, these events do not provide post-military facilities with the year-long occupation. What is needed is a concept that would enable historic sites to thrive regardless of the season.

1.2. Classification of decommissioned facilities

Within the framework of the study that was being conducted at the Faculty of Architecture of the Poznań University of Technology, 43 decommissioned military facilities were examined, all of them located in the region of Greater Poland. The list of facilities to be examined had been created on the ground of information acquired from the Military Infrastructure Administration in Poznań, the Military Property Agency (Gorzów Wielkopolski Branch), the Military Academy of Land Forces in Poznań, the Land Forces Training Center in Poznań, publications listed in the bibliography, available maps, archives, and websites administered by military and history enthusiasts.

In accordance with the Polish Classification of Buildings (PKOB), they had been categorized as Military Engineering Structures (e.g. forts, blockhouses, bunkers, rifle ranges, proving grounds, military research centers, launch pads), Barracks, Military Aviation Units (e.g. buildings for transportation and communications), and Other (remaining beyond the defined subgroups).

1.3. Architectural indexation of post-military facilities

The second stage of the study consisted in the architectural indexation of post-military facilities. It was based on the literature study as well as consultations with the Regional Historic Preservation Officer, the Military Infrastructure Administration, and the Military Property Agency.

The evaluation was carried out with allowance for the following two criteria: time of construction and technical and functional values. Particular attention was directed towards technical or spatial solutions that remain unique on a domestic or European scale. On the ground of gathered materials, the author of this paper carried out an indexation of examined facilities with the use of a five-point grading system. This led to the production of a list of 12 post-military facilities that exhibit great historical value: the secret Soviet base with the nuclear missile depot in Brzeźnica-Kolonia, Forts Ia and VIIa in Poznań, infantry shelters at Minikowo street and Babimojska street in Poznań, the interfield shelter of Fort II in Poznań, the weir on the Cybina river in Poznań, the bomb depot in Stara Łubianka, the former base of the Air Defense Missile Division in Złotkowo, barracks in Piła, and two examples of officers' mess halls – one in Biedrusko, and the other one in Śrem.

Figure 1. Location of all 43 decommissioned post-military facilities (Author's own work).

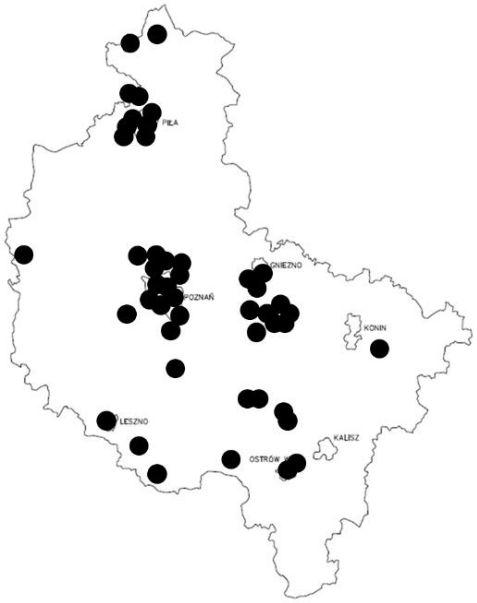
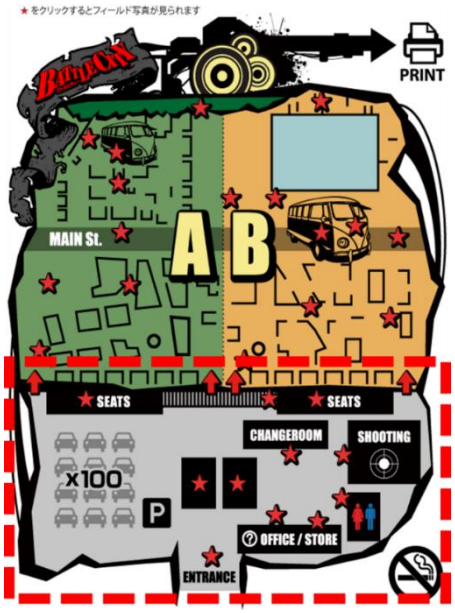


Figure 2. Schematic drawing of the Battle City, with the marked safe zone [7].



2. PARAMILITARY SPORTS

2.1. Definition

For the purpose of this study, the author has adapted the following definition of paramilitary sports:

Paramilitary sports are apolitical group games that involve military tactics to various degrees and consist in eliminating opponents by hitting them with different types of ammunition. Depending on the discipline, emphasis can be placed on the realistic tactics as well as the appearance of firearm replicas, players' apparel, and other equipment. Paramilitary sports include the following types of games: NERF, Laser Tag, Paintball, and Airsoft.

The above definition was compiled on the ground of the explication of the term *paramilitary organizations* provided by Piotr Socha, Sergeant at the Polish Rifleman's Association [8], and the interpretation of the word *paramilitary* published by Professor Mirosław Bańko [9] in the PWN's online dictionary of the Polish language.

2.2. Evaluation of adaptability of the historic military architecture to the needs of airsoft games

The next stage of the study was the evaluation of adaptability of the historic military architecture to the needs of airsoft games. Among other paramilitary disciplines, airsoft is distinguished by the most realistic imitations of uniforms, weapons, and other pieces of equipment, as well as the game field behavior that reflects real military tactics. Airsoft groups

attract history and military enthusiasts, who frequently specialize in historic reenactments, specifically those associated with World War II, Vietnam War, or contemporary armed conflicts.

Table 1. Summary of the survey results concerning the green tactics (outdoor) facilities (part 1 out of 3)

Examples of an expert survey of four airsoft centers. The complete results from the survey are presented in the doctoral dissertation by A. Siniecki: "The organization of paramilitary sports as a way of protecting historic military facilities, as exemplified by airsoft games" (Author's own work).

		Battle Arena, Poland	Centrum Rozrywki Militarnej WOLA-CAMP, Poland	GO-SYSTEM, Poland	BLACKFIELD, Germany	The highest-grade parameter used in the theoretical model of a paramilitary sports center
No.	Categories:	Examined airsoft centers:				Results
K0.1	Distance from the voivodeship's capital	3,33	2,11	3,11	1,89	
K0.2	Distance from the district's capital	3,56	3,33	3,56	3,00	
K0.3	Is the area designated as a listed facility?	3,33	3,89	3,89	3,56	
K0.4	Size of the plot:	3,56	4,78	4,44	4,11	256 700 sq. m. (4,78)
K1	**ACCESS AND PARKING LOT**					
K1.1	Distance from the main road	3,67	3,33	2,78	4,44	
K1.2	Asphalt-paved driveway	4,56	2,78	4,56	4,11	Asphalt road
K1.3	Number of parking spaces	4,11	3,89	4,67	1,67	180 (4,67)
K2.1	**OFF-GAME ZONE**					
K2.2	Sanitary facilities	4,56	4,56	3,44	4,44	Yes (4,56)
K2.3	Locker rooms	4,11	4,11	2,56	4,11	Yes (4,11)
K2.4	Catering outlet	1,56	3,89	3,89	1,67	
K2.5	Recreation facilities (bonfire, barbecue, tables and benches)	4,22	4,22	4,11	4,22	Yes (4,22)
K2.6	Command post for the players	1,67	1,67	4,00	1,11	Command post (4,00)
K2.7	Office	3,33	1,89	1,89	1,89	
K2.8	Storage room (for the equipment, obstacles, etc.)	1,33	4,22	3,78	4,00	Storage room (4,22)

49 categories graded by experts with the use of the 0-5 point system

Objective selection of the most optimal parameters for respective zones of a paramilitary sports center

According to the study conducted by the Center for Airsoft Statistics and Player Relations in 2013 [10], this discipline is practiced mostly by young people who are well-educated and belong to the group of high earners. Professional airsoft communities operate in Japan, Korea, United States, and Western European countries. A considerable number of airsoft enthusiasts travel the world to participate in the most important and esteemed competitions, such as the Border War in Ralsk in the Czech Republic, which is held on a former military proving ground. Each year, the event attracts around 1300 players from around the world. According to the report, airsoft remains an elitist sport. The average spending of airsoft players (firearm replica and basic gear) ranges from $1800 to $2700. This

sum could be easily doubled by the purchase of GPS devices, night vision devices, grenade launchers, pyrotechnics, and special vehicles, as well as the costs of traveling and event fees.

Figure 2 presents an airsoft game field by using the example of the Battle City Union, a reputable Japanese airsoft center. In the off-game zone (at the bottom of the drawing, there are offices, shops, locker rooms, toilets, and recreational facilities for customers – airsoft players. It is worth noting that this zone generates income necessary for maintaining the game field, which is actually a defunct military structure.

The functional and spatial indexation of 20 airsoft game fields, located both in Poland and abroad, was carried out. Each center was examined from the following four angles: access and parking lot (K1), off-game zone (K2), game field (K3), and safety (K4). Each of the 20 centers was examined by the group of 10 experts in terms of 49 criteria with the use of the 0-5 point system. The considered criteria include, among others: the size of the center, the number of parking spaces, the off-game zone furnishings (sanitary facilities, locker rooms, and recreational facilities), the size of the game field, the number of buildings, the architectural attractiveness, the lay of the land, and the number and type of obstacles. The survey results facilitated the objective selection of the most optimal parameters for respective zones of a model paramilitary sports center.

The same survey results were then used by the author of this paper for the purpose of examining 43 post-military facilities, all located in the region of Greater Poland, from the above-mentioned four angles with the use of the 0-5 point system. This resulted in the identification of 7 facilities that show the greatest potential for being adapted as paramilitary sports centers: the fuel and lubricant depot in Babina, garrison firing ranges in Biedrusko and Witaszyce, the Soviet base with the nuclear missile depot in Brzeźnica-Kolonia, Forts Ia and VIIa in Poznań, and the bomb depot in Stara Łubianka.

3. THEORETICAL MODEL OF A PARAMILITARY SPORTS CENTER

The results from expert surveys helped to objectively specify the most optimal parameters for respective zones of paramilitary sports centers.

3.1. Access and parking lot:

Regardless of the facility's nature, the most coveted type of access road is the one paved with asphalt concrete. It should not exceed several hundred meters in length. The number of parking spaces depends on the location and preferred tactics.

CQB facilities are usually located in urban areas. Spatial restrictions of indoor facilities and the resulting limited capacity of a game field, translate directly into the number of available parking spaces. Similarly to their foreign equivalents, there is a tendency among Polish providers of CQB game fields to lease halls in commercial or warehouse complexes, and thus make use of a large common parking lot with more than 50 parking spaces[2]. In case of halls, where the game field does not exceed 1200-1400 sq. meters (13,000-15,000 sq. feet), the coefficient is 4 parking spaces for each 100 sq. meters of the game field.

[2] This is perfectly exemplified by *Killhouse* in Warsaw (more than 30 parking spaces) and *Republika ASG* in Wrocław (50 parking spaces).

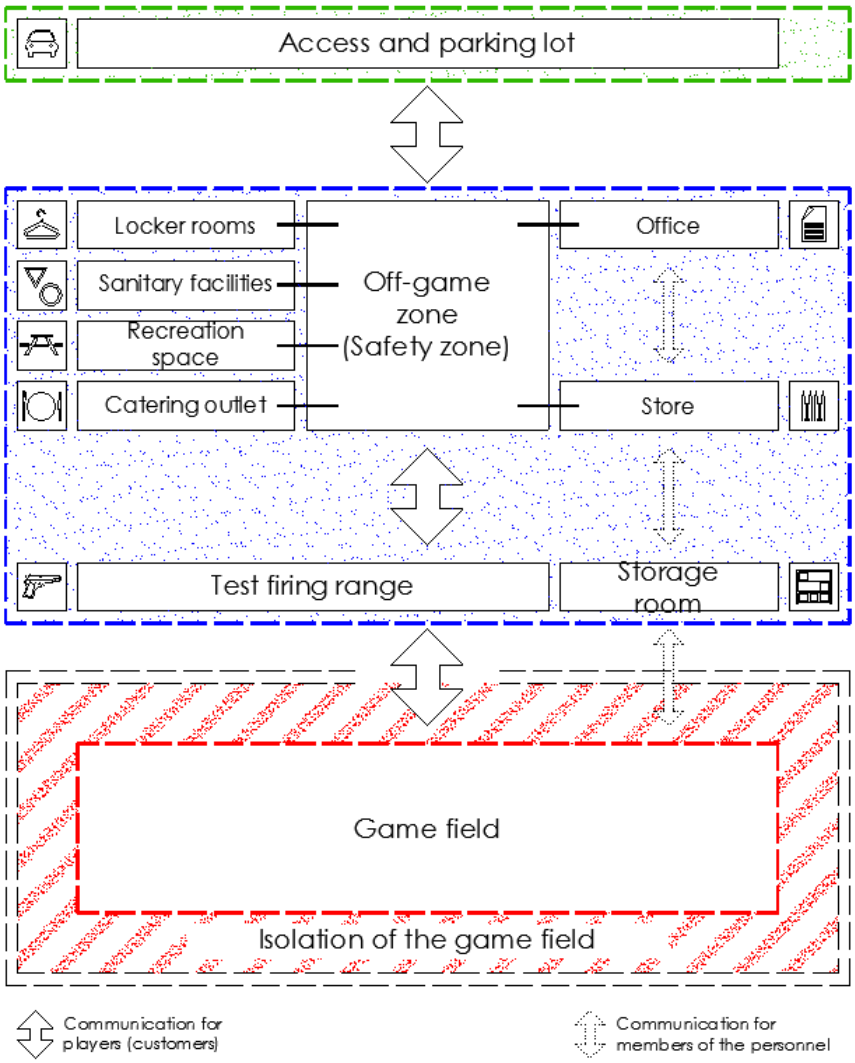
Those centers that offer outdoor CQB facilities are located in the suburbs of large cities or in rural areas. The size of respective zones, as well as the parking lot, depends on the plot's total area. For the highest-graded centers, where the area of the game field amounts to 14,000-15,000 sq. meters (150,000-160,000 sq. feet), the coefficient is, respectively, 0.3 and 0.6 parking space for each 100 sq. meters of the game field (3 and 6 parking spaces for each 1000 sq. meters). The limited capacity of parking lots also results from the fact that due to the remote location of such centers, large numbers of players share cars while traveling to the game field.

Those centers that are oriented towards woodland or open-field games, and are usually located far from large cities, have parking lots that are ready to accommodate more than 100-180 passenger cars. Thanks to this, such facilities are capable of organizing airsoft events and historical reenactments. In case of these centers, the coefficient is approx. 0.1 parking space for each 100 sq. meters of the game field (1 parking space for each 1000 sq. meters)[3].

[3] The largest airsoft center among the examined facilities (Wola Camp), with the total area of 26.6 ha (65 acres), had the coefficient of 0.4 parking space per 1000 sq. meters of the game field.

Figure 3. Schematic drawing of the functional and spatial model of a paramilitary sports center

(Author's own work).



3.2. Safe zone / Off-game zone

In order to maintain its basic functionality, the center should provide locker rooms, sanitary facilities, the storage room, and recreational facilities (such as benches, tables, bonfire spots, barbecue stands). The presence of a briefing room / command post, where players can discuss the game's strategy and then make necessary adjustments on the go, was perceived as a positive feature only in large outdoor centers that are oriented towards green tactics.

Catering outlets or small diners located within the center are required in outdoor black tactics facilities. Still, it depends on the location of particular centers. City-based airsoft halls are usually surrounded by a great number of small diners and restaurants. Most players do not stay in longer than several hours, and the commute takes them less than an hour. On the other hand, large rallies and airsoft events frequently span several consecutive days (mostly over the weekends) so the players bring their own tents and food. What is more, such facilities usually fail to provide proper infrastructure for catering outlets.

The similar issue is observable in terms of administration offices. According to the experts, the offices should be located within airsoft halls. However, they are not required in larger centers. This provides for practicality since the customers who are interested in the organization of large events do not have to travel out of the city in order to meet the manager of the center.

3.3. Game zone / Game field

Most differences between respective airsoft centers are visible in the game field. The field's size and form depends on the employed tactics and nature of the given facility. Furthermore, a game field may be divided into built-up areas, woodlands, and open fields. The centers that are oriented towards green tactics tend to place emphasis on the presence of natural obstacles: rivers, water bodies, fallen trees, thick vegetation, and the diversified lay of the land. Additional obstacles should only complement the natural landscape, e.g. bridges, roadblocks, and fencing with gates. Such places frequently prove to be strategic in the game's scenario. Potential buildings should be formed as architectural complexes. Capacity of such game fields should amount to at least 300 players.

The black tactics, which involve close quarter battle, have been devised chiefly for competing in urban areas. Therefore, most centers are developed in the likeness of small towns with buildings, municipal squares, and streets filled with cars. The game field should cover green areas, preferably with a water body of some sort. The field's area should roughly amount to 1.5 ha (around 3 acres) in case of outdoor facilities and remain compacted to 1200-3000 sq. meters (13,000-32,000 sq. feet) for covered fields.

3.4. Safety

All examined centers revealed the need to make the game field inaccessible to outsiders. The center should be isolated from other buildings, and preferably fully fenced. While surveying, much attention was paid to the issue of securing the game field, removing or marking any places that could pose hazard to life or health of the players (openings, wells, protruding rods and metal elements). Extra points were awarded to those establishments that provided landing pads for air ambulances.

4. SUMMARY

The main objective of the study consisted in the devising of a theoretical model for functional and spatial development of paramilitary sports centers. On the ground of the analysis of current tendencies in shaping airsoft game fields, the expert survey, and the evaluation of criteria that was carried out by competent judges, three models have been developed, each one complying with the specific nature of paramilitary sports.

The usefulness of the theoretical model was confirmed in the process of three experiments that had been carried out in two former military facilities and the military proving ground in Biedrusko. From the results of conducted analyses, the following conclusions have been drawn:

1. The greatest adaptability is exhibited by the decommissioned military bases. The area of the plot allows sensible development of the available space. In certain variants, it would be possible to adapt a single facility for both the green tactics (firing zone) and the black tactics (barracks). This enables the organization of two concurrent smaller events or one bigger.
2. Areas that used to be occupied by the military technical infrastructure (e.g. radio beacons, signal corps posts) are not suitable for being employed as paramilitary sports centers. Factors, which prove disadvantageous, include the limited area of such places, the proximity of neighboring buildings, and the presence of outsiders (local residents, strollers, mushroom pickers, and hunters).
3. Access roads had been constructed to accommodate large vehicles. In most cases, these roads survived in rather good condition and do not require any maintenance or upgrading. What is more, each base provided a parking lot for officers' private cars.
4. Large distance from the nearest buildings increases the safety of organized games. Decommissioned proving grounds and garrison firing ranges feature earthen structures, such as embankments or backstops, which provide additional protection of outsiders and passers-by.
5. In terms of architectural and historical attractiveness, it is noticeable that older facilities (Prussian fortifications), including buildings, are clearly more detailed. Newer structures, that were erected after World War II, were based on standard designs, where functionality was imperative, and were usually constructed with precast concrete units. However, there are some exceptions to this rule, such as the former base of the 77th Air Defense Missile Division in Złotkowo. The buildings exhibit attractive details that are difficult to find in other similar complexes in Poland, including brick skirts, cornices, and surrounds of main entrances and gates. All buildings are compositionally coordinated. Another complex that is highly appreciated both by architects and urbanists is the bomb depot in Stara Łubianka. Its most noteworthy feature is the geometric watch tower that had been laid out on a polygon, accentuated with skirts, the texture of the white brick, and rhythmic daylighting of the staircase. It is located in the northern corner of the plot, thus acting as a spatial marker of the entire complex.
6. The study revealed that some post-military facilities are not suitable for the organization of paramilitary competitions. The reason for this unfitness may be the limited area, inability to meet safety requirements, or unattractiveness of the game field.
7. Fort VIIa in Poznań, the bomb depot in Stała Łubianka near Piła, and the nuclear missile base in Brzeźnica-Kolonia belong to one of the most attractive post-military areas that are adaptable to the needs of paramilitary sports. These are followed by the Fort Ia "Boyen" in Poznań, the infantry shelter at Gołężycka street in Poznań, the interfield shelter of Fort II near the weir on the Cybina river in Poznań, the decommissioned base of the 77th Air Defense Missile Division in Złotkowo, and the Officers' Mess in Biedrusko.
8. The analysis of all 43 facilities demonstrated that 8 of them require urgent intervention, while 5 others should undergo major refurbishment. The Officers' Mess in Biedrusko, the Fort Ia "Boyen" in Poznań, the base of the 77th Air Defense Missile Division in Złotkowo

near Poznań, and barracks at Kołobrzeska street in Piła belong to the complexes of unique and highly appreciated architectural value. Unless re-employed, they will continue to fall into ruin.

On the ground of the General Airsoft Statistics Report, published by the Center for Airsoft Statistics and Player Relations, it may concluded that paramilitary sports remain elitist. Airsoft players are usually entrepreneurs and full-time workers who on average earmark $2000 for the necessary gear and equipment alone. Large sums of money are also invested in military vehicles that are customized to the needs of airsoft games, firearm replicas, and traveling to the venues of airsoft competitions. Players from the United States and Western European countries lead the way in such spendings. The adaptation of post-military facilities in Poland for the purpose of serving these customers may not only protect architecturally valuable structures, but also – analogically to golf courses – contribute to the economic stimulation of nearby towns.

The results of the analysis of the adaptability of disused post-military areas as paramilitary sports centers as well as the presented examples of such facilities, that already operate, constitute a confirmation of the assumed thesis: The theoretical model of paramilitary sports centers is a helpful tool in the process of evaluating the suitability of the given facility for the organization of Airsoft games and helps properly develop the area in terms of its functionality and spacial lay-out.

The presented method may be employed as the tool for selecting historic post-military sites around the country that should undergo revitalization by means of hosting airsoft games.

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MUTUAL RECOGNITION BETWEEN FATHERHOOD AND MOTHERHOOD

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ABSTRACT

Parenting is difficult, complex and very important. If a person grows up with relatively little psychopathology, if he/she is functional and adaptive, can love and work, we can be sure that he or she had a good-enough parents. The child needs adequate mothering, but what about fatherhood? It is certain that a lucky child is the one who has a mother that is comfortable fathering, and a father who can be mothering. In other words, the relationship between masculine and feminine identity as parental function needs to be a mutual recognition rather than a split because the split can lead to repudiation of femininity and idealization of father. If the father is seen as liberator and mother as dependency, idealization of father replaces the fear of him and this leads to guilt and the development of superego. This is indicated by lack of self-esteem and feelings of inferiority, unworthiness and shame. In this regard, Jessica Benjamin's notion of "the oedipple riddle" - the Oedipus complex and its idealization of father and denunciation of femininity - and Kristeva's concept of "Oedipus prime" – "the presence of the paternal within the maternal which prepares the infant to Oedipus complex - are seems two important sources to understand the necessity of the elimination of the parental dualism in terms of sexual polarity; motherhood and fatherhood. As the basic logic in Oedipus complex is separation of mother from father priviliging the paternal, paternal authority always has the role of preserving the narcissistic fantasy. According to Freud, narcissistic adult is the one who has a tendency to attach to the same and intolarance of identification with difference. Narcissistic disorder, in general, is marked by an inability to tolerate ambivalence and ambiguity. For Kristeva, narcissus can not achieve the necessary transfer from maternal to paternal symbol. What is necessary for the transfer from maternal to paternal function, is the "loving father" or "the imaginary father". The imaginary father is both precursor to the oedipal father and a necessary pre-condition for the advent of the symbolic since it refers to the maternal function's connection with the symbolic or the child's reunion with the mother through the figure of father. It makes the subjectivity possible.

Key words – farherhood 1, motherhood 2, oedipus complex 3, seperation 4.

INTRODUCTION

Family is known as the usual source of the long-lasting and determining relationships in a child's life and as the basic unit of society. Since the family is the cornerstone of society, parents are at the core of the solution to the problem of mental distress or illness in the future adults. Realizing this, to solve today's problem of self-centeredness which is a certain narcissistic disorder and becoming dominant in the societies, we can easily turn to parents. A 'social character' that seemed peculiar to our times is described by clinical psychologists as "inability to differentiate from the other without repudiating the other, inability to tolerate ambivalence, the incapacity for mature dependence [17], and the recognition of mutual interdependence. Extending Kristeva's concept of "paternal function" and Benjamin's (1988) work on gendered versions of domination and submission, I argue that capitalist and patriarchal formations have together promoted dominant 'ideal' versions of masculinity and femininity that split and render mutually exclusive human longings for both agency and connection.

Juliet Mitchell stated that "psychoanalysis starts but does not end with Freud. Yet his work remains the reference point, the still explosively creative point of departure and of return both for clinicians and for theorists"[13]. Freud's theory of subjectivity is firstly a theory of masculinity due to castration complex. Then British psychoanalysts D.W. Winnicott and Klein came up with the concept of the 'good-enough mother' and emphasized the pre-oedipal life of the infant. Contrary to Freud, they returned to the mother and Klein believed that differences between the self and the other began earlier in infancy. Consequently, "the Freudian and Kleinian models tended to emphasize the role of one parent in the process of subjectivation: the father for Freudians, the mother for Kleinians" [5]. In bringing these two together, Kristeva and Benjamin proposes a re-theoriztion of a new form of subjectivity; the celebration of difference and mutual recognition between maternal and paternal, rather than maternal's eradication, which is crucial for the preservation of psychical life and of human creativity.

THEORY

Julia Kristeva and Jessica Benjamin's works follow the path in the psychoanalytic theoretical continuum inaugurated by Freud and Klein. Although they provide a feminist psychoanalytic challenge to these theorists, in fact their work bridges two theoretical factions so far kept apart. The Freudians saw the father as director and Kleinians focused on the role of the mother in the process of subjectivation. Kristeva brings the two models together and concerns the necessity and possibility of mediation between pre-Oedipal mother and the

paternal father. In fact, Kristeva questions the formation of the subject in the Western metaphysical tradition in which the movement from "One" to the "Other" has been reduced to a violent act of rupture since the split is due more to denial and suffering than to a replacement. "Kristeva's aim in *Revolution in Poetic Language* is to rethink the necessity, stakes, and character of this denial that is seen as constitutive of both speech and the subject" [3]. The rupture is seen not only a source for the subject formation but also it causes a metaphorics of gendered hierarchical oppositions. In this sense, Kristeva challenge the oppositional framework and highlights the necessity, or indeed, the possibility of mediation, as the process that cancels out oppositions in opening up the "One" to receive the "Other."

For Kristeva, human existence takes place within negotiations between the "symbolic order and "the semiotic, or maternal and paternal since the fixity of the symbolic order is continuously disrupted and opened up by the semiotic. She critiques Lacan's perspective of subjectivity and argues that the self is always changing, always in process, and therefore never stable and complete due to the constant disruption of the symbolic order by the semiotic means. Maternity becomes for Kristeva the principle metaphor for such a subjectivity. Thus maternal needs to regain its importance and value. **"**What is necessary for Kristeva is an imaginary father who is not only pre-Oedipal, but also prior to both primary narcissism and Lacan's mirror stage as well" [16]. According to Kristeva, the imaginary father participate in the establishment of subjectivity in two ways: maternal abjection; and the process of identification. According to Freudian theory, the child at first identifies with mother and then with the father. Kristeva add a fourth member to this process; the imaginary father. The imaginary father is the archaic father who brings an interaction and mutual recognition between semiotic and symbolic since it carries the characteristics of both mother and the father. Kristeva's theory is then changing the problematic regarding the maternal and paternal dualism. "Rather than the paternal preceding and the triumphing the maternal, the boundary between the two is permeable; the maternal already contains the paternal function and the paternal function operates before the maternal function sets in motion" [3]. Thus positioning one within the other produces fertile ground for the development of healthy subjectivity.

In the same way Jessica Benjamin is also a feminist psychoanalyst who is interested inreconciling intersubjective theory with intrapsychic theory, in challenging the bias in psychoanalytic thought towards gender. Benjamin deconstructs Freud's reading of the Oedipal myth to show how it is predicated on binary oppositions that preclude the recognition of difference. She challenge those theorists who "would posit a dichotomy between the

father-oriented post-oedipal superego of autonomy and self-restraint and the mother-dominated pre-oedipal narcissist for whom seperation and individuation has not been achieved [7].” With the concept of “Oedipple Riddle”, she criticizes the dualism withhold in terms of sexual polarity between motherhood and fatherhood. It is evident that the Oedipal theory denies the necessity of mutual recognition between man and woman. Hence, by rejecting this false premise of paternal authority as the only road to freedom, it has to be construed that the oedipal theory has come to terms with difference.

DISCUSSION

Kristeva begins her discussion finding fault with Freud’s notion of the virtually insignificant mother. She puts a similar critique on object relations theory’s priviliging of the early mother-infant bond for the healthy development of the child, with little mention of fathers or others. Kristeva picks up the themes of good enough mothering and subjectivity through separation and combine them. Although she focuses on the psychological necessity of separation from the mother in order for subjectivity to occur, she refuses the denial and rupture of maternal which undervalue the role of mother in the formation of subjectivity. In *Tales of Love,* Kristeva draws attention to the importance of the pre-symbolic (pre-Oedipal), maternal-child relationship and of the semiotic. She sees the abjection or exclusion of maternal as a precondition for the establishment of narcissism depends on the subject’s idealized identification with the Oedipal/Symbolic Father. Therefore she posits the existence and importance of a different paternal function located in the period of pre-oedipal semiosis; the imaginary father. For Kristeva, it is the imaginary father who helps the subject to separate from the mother and achieve a healthy subjectivity without causing a crisis in the future’s speaking subject. If a child’s subjectivity is to proceed normally, the infant’s illusions of omnipotent union with the mother must be dashed. She or he must discover a separateness from the mother— an awareness of the mother as “other,” which allows a concomitant awareness of the self as a self. In Kristeva’s scheme, part of the child’s semiotic unity with the mother consists in the fantasy of being all that the mother desires. In fact, according to Kristeva, the advent of the imaginary father for the child is that point at which the child becomes aware that she or he is not the mother’s sole desire. To be able to what the mother deire and to keep his/her unith with the mother, the infant identifies with the imaginary father. By taking the idealized imaginary father as the self, the subject in process buys a little time. The imaginary father is the one who repair the wound of separation since it enables the infant keep its relation to the maternal until an internalized, actual identity has time to develop. The imaginary father is the father of love who does not prohibit the child’s desire

for the mother because he does not function as the paternal law, as the cause of what she calls "psychotic discontent" and "crisis in paternity. The real cause of the contemporary crisis in the subjectivity, for Kristeva, is not lack of Law or the Superego, but the erosion of the loving father . In contemporary society, key to the production of narcissism is the "crisis of love". The imaginary father provides a place where the discourse of love can occur.

According to Julia Kriseva, society is witnessing a crisis of subjectivity due to Lacanian patriarchal formations that promoted dominant 'ideal' versions of masculinity and femininity that split and render mutually exclusive human longings for both agency and connection. Kristeva points out that the crisis is directly related to a failure in the subject's imaginary to leave the maternal realm. This failure is resulted from the paternal castration of the maternal. Kristeva contends that the paternal acquires its domination through the exclusion of the maternal. Thus, the classical psychoanalytical position of Freud proclaimed the mother virtually insignificant. Yet Kristeva is then advocating a 'neither forbid it nor repress it' [5]. Although she questions either overvaluing or undervaluing the maternal role, she often places women and mothering in the foreground and insists that the maternal function prepares the future subject for the paternal function. For Kristeva, the maternal is the space where the child begins to encounter the outside world. S/he experiences the satisfaction of bodily needs but also faces the frustration of those needs. Kristeva argues that the infant's movement from maternal to the paternal has been reduced to a violent act of rupture and this rupture becomes a precondition for the establishment of narcissism depends on the subject's idealized identification with the Oedipal/Symbolic Father. In *Tales of Love*, Kristeva posits the existence and importance of a different paternal function located in the period of pre-oedipal semiosis usually reserved for the mother-infant dyad alone. She thus "participates in inscribing within the child's psyche the experience of dualism in the transfer from maternal into paternal, which is the basis upon which symbolic representation will rest"durham. Hence, Kristeva sees the maternal and paternal functions as two moments of birth of the human subject. In this context she says that the father gives birth, it is true, but in a quite metaphoric sense: he ensures the paternal metaphor", the accomplishment of this transfer of the drive into signification that the mother constantly prepares [the child] for [9].

The transfer from drive to signification, or from maternal to paternal functions, is enabled through what Kristeva terms "the loving father" [9]. The loving father refers to a kind of archaic father who is neither Oedipal Father nor phallic mother but holds the characteristic of both parents. "The loving father represents the maternal connection with the symbolic or the paternal metaphor within the maternal"durham. Such an early location of the

imaginary father has important implications in Kristeva's work. First, its preoedipal existence places it prior to the "Name of the Father," or the Symbolic Father identified with the Law. Kristeva identifies the imaginary father as the "loving" father who stands in contrast to the judging stern Oedipal father associated with the harsh and punitive superego. In this way she clearly contrasts the imaginary father from the Oedipal father not only in time but also in "temperament" or substance. Second, Kristeva considers this imaginary father as both precursor to the oedipal father and a necessary pre-condition for the advent of the symbolic. In other words, Kristeva asserts that the *imaginary* father makes subjectivity possible [16]. Third, by situating the imaginary father in pre-oedipal space, Kristeva "problematizes the borders of the maternal and paternal functions, thereby, in a sense, 'abjecting' the traditional paternal function" [10]. Kristeva emphasize the importance of a loving aspect of paternal function within the maternal as opposed to the Freud and Lacan which focus on its sternnes. In other words, a loving father easify the transition from maternal to paternal and prevent the fragmentation of the child which is the real causes of crisis in subjectivity.

In this context mother's continual relation to the father act as a support for the mother's participation to the socio-symbolic order. The relatioship between maternal and paternal, mother and father is to be depend on the mutual recognition rather that seperation. Therefore, the definition of paternal categories and their function originated from Freud's Oedipus complex must be questioned and modified to move away from biologism towards a healthy subjectivity. This is important in order to acknowledge that not only to our mothers and not merely our fathers but the relationship between parents play a crucial role in the formation of the 'self'. While separation from the maternal body is essential if women are to accede to subjectivity, this does not necessitate psychical matricide in the strong sense: to deny the mother expression within the Symbolic economy [1].

On the other hand, Jessica Benjamin argues that the split between a father of liberation and a mother of dependency bring the repudiation of femininity. For the child, the identification and the closeness with the mother turns in to something that is to be overcome for independency. For Freud, the Oedipus Complex is the most important point for the transition to subjectivity at which the child come to terms with both general and sexual difference. If we do not acknowledge the mother as a separate subject on a theoretical and a practical level, Benjamin argues, then we cannot come into being as separate subjects either; "for the self if dependent on the mother for the recognition she seeks, and if that mother does not survive, the self does not survive either. The repudiation of femininity that is written into

the Oedipal complex by Freud as the incest taboo"[3]. Thus, it is the Oedipal injunction that one must not be like the mother in order to possess her, or the splitting off of identificatory love from object love, has disastrous consequences for the boy's development of selfhood and agency.

She borrows the concept of "being with the other" that allows room for mutuality and difference from Daniel Stern and from Winnicott and defines it as follows:

To transcend the experience of duality, so that both partners are equal, requires a notion of mutuality and sharing. In the intersubjective interaction both partners are active; it is not a reversible union of opposites (a doer and a done-to). The identification with the other person occurs through the sharing of similar states, rather than through reversal. "Being with" breaks down the oppositions between powerful and helpless, active and passive; it counteracts the tendency to objectify and deny recognition to those weaker or different-- to the other. It forms the basis of compassion, what Milan Kundera calls "co feeling", the ability to share feelings and intentions without demanding control, to experience sameness without obliterating difference [6].

Here, it is the existing hierarchical value system and cultural syptoms are accused by Benjamin. Traditional mothers cannot represent to their children a model of seperation and agency. Fathers also can not emotionaly nurture their children for they are only possessor of the phallus. For Benjamin this long held belief is the central source for the Freudian repudiation of the femininity. To solve the oedipal riddle is not to 'adapt' a problem (penis envy) but to illuminate a problem which psychoanalysis scarcely acknowledges: the Oedipus complex and its idealization of father and denunciation of femininity. The basic logic in Oedipus complexis separation since father seen as liberator, mother dependency. Thus, paternal authority also has the role of preserving the narcissistic fantasy [6] through repudiation of femininity because the split can lead to externalization of one's desire. As a result, she argues for a New Oedipus;

The way out of the oedipal repudiation of femininity must be sought in the period that comes before it. Between the boy's early disidentification with the mother and his oedipal separation from her is a neglected phase of playful, secondary identification with femininity. By changing social relations of gender gives a glimpse of another world, a space that each of us can play the other and accept difference by making it familiar. To go beyond Oedipus, the role of understanding gender differences becomes a major issue. When individuals lose

access to internal and external forms of maternal identification, independence backfires: it stimulates a new kind of helplessness, one which has to be countered by a still greater idealization of control and self-sufficiency [6].

For Benjamin, by going beyond Oedipus we can envisage a direct struggle for recognition between man and woman, free of the shadow of the father that falls between them.

METHODS AND RESULTS

Through the works of Kristeva and Jessica Benjamin, the present study took as the object of study the relationship between narcissistic personality disorder and parenting. The followers of Frankfurt School saw the origins of narcissistic personality disorder in the decline of the patriarchal family due to capitalism and bureaucracy. Instead, feminist theorists such as Jessica Benjamin and Kristeva argued that the very oedipal dynamics patriarchy idealize in fact create the version of autonomy that defensively devalues emotionality, vulnerability, and dependency, and values a kind of autonomy marked by pseudo-differentiation and pseudo-rationality. The first part introduced Freudian psychoanalytic thought with its relation to Kristeva's concept of "paternal function". The second part analysed Benjamins critique of Lasch and his belief regarding to Oedipus myth. The "maternal" was defined within Freudian, Kleinian and Kristevan contexts, comparing and contrasting the three approaches and pointing out the relationship between "paternal" and "maternal". As a result, autonomy, in Western culture, has been understood to rest not on mutual interdependence but on radical aloneness. As a Kristevean solution, a re-theorising of the maternal that offers much prospect first in understanding the crisis of subjectivity and second in renewing the subject's contract with the socio-symbolic sphere" [3] is argued. Benjamin's argument that the Oedipal theory denies the necessity of mutual recognition between man and woman is promoted by Kristeva's findings. It is concluded that by rejecting this false premise of paternal authority as the only road to freedom, it has to be construed that the oedipal theory has come to terms with difference.

CONCLUSION

As part of a long-established family tradition, there has always been a seperation not only between mother and father but also maternal and paternal roles respectively according to their biological and socio-symbolic connections. As a result of these binary opposition, a crisis of subjectivity in contemporary society is on the stage. In traditional dominant forms of masculinity, so-called masculine qualities are directly relared to a kind of autonomy that arises when one receives recognition and esteem from the repudiation of connections and the dependency needs that go along with them [5]. Yet, key to the traditional definition of

feminine qualities is a kind of connection or relatedness that arises when one is consistently not recognized and/or humiliated for asserting one's own agenda. These split masculine and feminine subject positions incarnate two different versions of narcissism. Although all who suffer from narcissistic disorder show both sides of these splits, generally people lead with one set of defenses and hide the other side. Thus, one dominant masculine version of narcissism articulates grandiosity with devaluation of the other and with isolating defenses against merger, while a traditionally dominant female version articulates self-deprecation, idealization of the other, and a defensive longing to merge and lose oneself in the other. Because it is a dialectical disorder, the two types tend to seek out one another to couple, generally causing lifelong misery as each tries to heal the split in ways that simply fortify it. What those who write about capitalism and narcissism tell us is that key to the production of narcissism is the radical separation of the individual from the social. And what feminist theory suggests is that the repudiation of maternal and dependency, demanded by both that radical separation and by disavowal, finds its way also into split, narcissistic gender/race/class/sexual identities. If the individual is unable to but has to choose between mother and father, to take sides once and for all, he/she is exhausted from standing in the liminal spaces. The result of this split is narcissistic self structure and narcissistic relations: urges either to conform or to rebel in a violent form stem from experiences of never feeling good enough, never feeling listened to, never feeling connected to others in any but exploitive ways. Those theorists, like myself, believe that all kind of foreignness, strangeness, extraneousness and extravagance come from the heteronormative phallocentric cultures' denial of the duality. What I want to emphasize is that value and meaning of the maternal and paternal wholly reside on their mutual relationship in spite of the difference.

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